US Army Corps
of Engineers®
Buffalo District

APPENDIX A - RESPONSIVENESS SUMMARY

RECORD OF DECISION

FOR THE LINDE SITE

TONAWANDA, NEW YORK

LINDE SITE
RECORD OF DECISION

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for the Proposed Plan
for the Linde Site
Tonawanda, New York

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1. INTRODUCTION

On March 26, 1999, Buffalo District, United States Army Corps of Engineers (USACE) issued a Proposed Plan (PP) for the proposed cleanup of the Linde Site in Tonawanda, New York. Public meetings were held on April 22, 1999 and June 3, 1999 during which the USACE presented background information and its recommended cleanup strategy for the Site. During these meetings, the public was invited to submit comments and written comments were accepted through June 11, 1999. This Responsiveness Summary addresses the comments received from the public during the public meetings and the comment period.

The preferred cleanup remedy for this site, as presented in the PP, is Alternative 4, which is described on page 13 of the PP. This alternative meets the commitments made to community representatives, is fully protective of human health and the environment, complies with all applicable or relevant and appropriate laws and regulations, and provides the best balance among the alternatives that were evaluated for this site.

2. OVERVIEW OF PUBLIC INVOLVEMENT

Summary of Community Relations Activities for the Release of the Proposed Plan for the Linde Site

Before the start of the PP comment period, a news release was issued to the local newspaper media on March 26, 1999 announcing the release of the plan and the comment period dates. Legal advertisements were placed in the Buffalo News (March 28, 1999), the Tonawanda News (March 31, 1999) The Ken-Ton Bee (March 31, 1999), the Kenmore Record Advertiser (March 31, 1999) and the Niagara Gazette (March 28, 1999). A total of 858 letters announcing the availability of the plan and the comment period were mailed on March 26 to the community members on the site mailing list.

Invitations were sent on April 8 to parties on the site mailing list for the first public meeting scheduled for April 22, 1999 encouraging attendance and comments. A news release was faxed to the local newspapers on April 8, 1999. Legal ads were placed in the Buffalo News (April 18, 1999), the Tonawanda News (April 12, 1999), the Ken-Ton Bee (April 14, 1999), the Kenmore Record Advertiser (April 14, 1999), and the Niagara Gazette (April 18, 1999). Copies of the news release, letters of invitation, ads, and the PP were placed in the Administrative Record File for the Linde Site. The news release and the PP were also available on the Buffalo District website.

The first public meeting was held on April 22, 1999 from 7 p.m. to 9 p.m. in the Holmes Elementary School Auditorium adjacent to the Linde Site. The following fact sheets were available at the meeting: Linde Site, Environmental Glossary, Risk Assessment, Material Flow at FUSRAP Sites, CERCLA-Superfund, CERCLA Process, How Big is a Picocurie?, Radiation, Radiation in the Environment, Radiation at FUSRAP Sites, and Radioactivity in Common Products. Copies of the proposed plan were also available as handouts at the meeting.

Forty-four members of the public signed in at the April 22, 1999 meeting. A court reporter was available at the meeting to record comments. At the meeting, USACE explained the history of the site, studies and investigations completed, areas of contamination, CERCLA evaluation criteria, the remedial action alternatives, and the schedule. Twelve formal comments were made at the meeting. Copies of the

transcript were placed in the Administrative Record File and made available on the Buffalo District website.

At the April 22, 1999 public meeting it was announced that the comment period was extended until May 27, 1999.

Postcards announcing the comment period extension were sent to the mailing list and ads were placed in The Buffalo News (May 2, 1999), the Tonawanda News (May 3, 1999), The Ken-Ton Bee (May 5, 1999), the Kenmore-Record Advertiser (May 5, 1999), and the Niagara Gazette (May 2, 1999).

On May 21, 1999, a news release announcing the June 3, 1999 public meeting and a further extension of the public comment period through June 11, 1999 was issued to the local newspaper media and placed on the Buffalo District website. Letters of invitation for the June 3 public meeting were sent to the 858 member community mailing list. Legal display advertisements were placed in The Buffalo News (May 23, 1999), The Tonawanda News (May 24, 1999), The Ken-Ton Bee (May 26, 1999), The Kenmore Record-Advertiser (May 26, 1999), and the Niagara Gazette (May 30, 1999).

Forty-three members of the public signed in at the June 3, 1999 public meeting. A court reporter was available at the meeting to record comments. At the meeting, USACE explained the history of the site, the remedial action alternatives, the cleanup criteria, the post-remedial modeling results, the quality assurance process and the schedule. The following fact sheets were available at the meeting: Linde Site, Linde Site Glossary, Risk Assessment, Material Flow at FUSRAP Sites, CERCLA-Superfund, CERCLA Process, How big is a Picocurie?, Radiation, Radiation in the Environment, Radiation at FUSRAP Sites, , and Radioactivity in Common Products. Copies of the proposed plan and the presentation were also available as handouts at the meeting. Thirteen formal comments were made at the meeting. The transcript was placed in the Administrative Record File and on the Buffalo District website.

After the Record of Decision for the Ashland 1, Ashland 2, and Seaway Area D Sites was signed, a separate Linde Site Administrative Record File was established. The Administrative Record File was placed in the Tonawanda Public Library, 333 Main Street, Tonawanda, New York, and at the USACE FUSRAP Public Information Center, 1776 Niagara Street, Buffalo, New York.

3. SCOPE AND ORGANIZATION OF THE RESPONSIVENESS SUMMARY

Nine (9) sets of written comments were received during the comment period, as well as comments received during the public meetings.

To provide a more descriptive response to the comments received on the PP, the comments were grouped under key subject areas (if possible) and generic responses were prepared to cover each comment group. These subject areas with corresponding Generic Comment Response IDs include:

Generic Comment Response ID	Comment Subject Area
(A)	Support for PP
(B)	Extension of public comment period
(C)	Residual uranium concentrations and future land use
(D)	Disposition of Building 14
(E)	Need for groundwater remediation
(F)	Consideration of applicable or relevant and appropriate requirements (ARARs)
(G)	State and community acceptance
(H)	Need for independent verification contractor (IVC)
(I)	Other Sites/Potential Sites

Section 4 presents these generic responses. Section 5 provides responses to specific comments contained in the comment documents, included as Attachments 1 through 11.

USACE encourages those interested in learning more about the Linde Site or other FUSRAP projects to review the Administrative Record File (which contains reports and other information), or call USACE's toll free number (1-800-833-6390) to ask questions or to be added to the mailing list for future mailings. The Administrative Record File for the Linde Site is available for public review at the following locations:

U.S. Army Corps of Engineers
Public Information Center
1776 Niagara Street
Buffalo, New York 14207-3199

Tonawanda Public Library
333 Main Street
Tonawanda, New York 14150

4. GENERIC COMMENTS AND GENERIC RESPONSES

The format used to address each key subject area consists of a set of composite questions representing the range of comments and the main concerns raised on a given issue. Each composite question is then followed by the USACE response. Table 1 provides a list of individuals or organizations submitting comments and Table 2 provides a comment response index including the date, a number for each comment, a brief description of the comment, and a letter designation(s) referring to the Generic Comment Response ID (if included, an * indicates the comment is not included in a generic response and the reader should refer to the specific response in Section 5). USACE's responses to the generic comments are presented in Section 4.1 through 4.11.

The submitted comments have also been placed in the Administrative Record File for the Linde Site. The Record of Decision (ROD), including this Responsiveness Summary, has also been placed in the Administrative Record File.

Table 1. List of Commenters

Commenter	No.	Representing	Date
Public Meeting Comments	1	Numerous	April 22, 1999
Public Hearing Comments	2	Numerous	June 3, 1999
George M. Melrose	3	Town of Tonawanda, Commission for Conservation of the Environment	April 7, 1999
Dennis A. Conroy	4	Praxair	April 16, 1999
Richard M. Tobe	5	CANiT	April 20, 1999
John J. LaFalce	6	Member of Congress	April 22, 1999
Mr. & Mrs. Raymond Chapman	7	Themselves	April 28, 1999
Paul J. Merges	8	New York State Department of Environmental Conservation (NYSDEC)	April 30, 1999
Dennis A. Conroy	9	Praxair	June 10, 1999
Leonore Lambert	10	League of Women Voters (LWV)	June 10, 1999
Maureen F. Leary	11	State of New York, Office of the Attorney General	June 11, 1999

4.1 Comment Response ID - A - Support of Proposed Plan

Includes comments: 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.3.1, 2.11.1, 2.14.1, 2.15.1, 2.18.1, 4.8, 9.5

Generic comment: In written comments received and in comments made at the April 22, 1999 public meeting, there was no support for the PP.

Following the April 22, 1999 public meeting, USACE met with community representatives to further clarify the uranium cleanup guideline proposed for Linde Site soils and committed to ensuring that the final concentrations of uranium in site soils after remediation would essentially be consistent with commitments made to the community in the past. The details of the cleanup guidelines for the Linde Site are addressed in the generic comment response C.

At the June 3, 1999 public meeting, USACE clarified the uranium cleanup guideline for Linde Site soils and stated USACE commitments to ensure that the final concentrations of uranium are acceptable (see details in response C).

At the June 3, 1999 public meeting, a number of community representatives expressed their support for the PP, as clarified by USACE concerning the uranium cleanup guideline for soils. These representatives also raised the issue of the disposition of Building 14 as a matter to be resolved. The Building 14 comments and the USACE response are addressed in generic comment response D.

Response: The preferred alternative meets commitments made to community representatives, is fully protective of human health and the environment, complies with all applicable or relevant and appropriate requirements (ARARs), and provides the best balance among the alternatives that were evaluated for the Linde Site.

Table 2. Linde Sites Revised PP Comment Response Index

Date	Comment No.	Comment from	Description	Generic Comment/ Response ID (if applicable)
4/22/99		**Comments during Public Meeting (transcript page numbers included)**		
"	1.1.1	Congressman LaFalce (letter in record)	Uranium cleanup guideline for soils (21 & 22)	C
"	1.1.2	"	Consensus of stakeholders (22)	*
"	1.1.3	"	Extension of public comment period (23)	B
"	1.2.1	Tobe	Extension of public comment period (23–25)	B
"	1.2.2	"	Corps policy on state concurrence and community acceptance (25 & 26)	G
"	1.2.3	"	Cleanup consistency with Tonawanda Master Plan (26)	C
"	1.2.4	"	Uranium cleanup guideline for Linde Site soils (26)	C
"	1.2.5	"	10 mrem/yr radiation exposure limit for workers and visiting public (27)	*
"	1.2.6	"	Application of MARSIMM techniques (27)	*
"	1.2.7	"	Potential need for radioactive waste license (28)	C
"	1.2.8	"	Use of an independent verification contractor (IVC) (28)	H
"	1.2.9	"	Radionuclide cleanup at Ashland 2 Site (28 & 29)	I
"	1.3.1	Calabrese	Cleanup guideline for Linde Site (31)	C
"	1.3.2	"	Potential need for radioactive waste license (31)	C
"	1.3.3	"	Radionuclide cleanup at Ashland 2 Site (32)	I
"	1.4.1	Krieger	Cleanup guideline for Linde Site soils (34)	C
"	1.4.2	"	F.A.C.T.S. lawsuit (35)	C
"	1.4.3	"	F.A.C.T.S. lawsuit (35)	*
"	1.4.4	"	Nuclear waste signs (36)	*
"	1.5.1	Hausrath	Contamination of Two Mile Creek (43)	I
"	1.5.2	"	Contamination of East Park near St. Timothys Church (44)	I
"	1.6.1	Conroy (Praxair)	Cleanup guideline for Linde Site (45)	C
"	1.6.2	″	Cleanup guideline for Colonie Site (45 & 46)	I, C
"	1.6.3	″	Potential need for radioactive waste license (46)	C
"	1.7.1	Bass-Early	Long-term contamination from radioactive waste (51)	C
"	1.8.1	Finch	Cancer risks (52)	F
"	1.9.1	Schafer	Exposure risks (54)	*
"	1.9.2	″	Tunnels at Linde Site (55)	*
"	1.9.3	″	Contamination in Building 31 and underground areas (55 & 56)	*
"	1.10.1	Swanick	Cleanup guideline for Linde Site (60-63)	C
"	1.11.1	Morford	Cleanup guideline for Linde Site (65)	C

Date	Comment No.	Comment from	Description	Generic Comment/ Response ID (if applicable)
"	1.11.2	″	Airborne contamination during site cleanup (65)	*
6/3/99		**Comments During Public Meeting (transcript page number included)**		
″	2.1.1	Tobe	Supports proposed remedy, with need to resolve Building 14 (21)	A, D
″	2.1.2	″	Accepts USACE position on cleanup verification (22)	A, H
″	2.1.3	″	Acceptance of proposed remediation (23)	A, H
″	2.2.1	Swanick	Supports proposed remedy, with need to resolve Building 14 (24)	A, D
″	2.2.2	″	Need to clean up Building 14 without deed restrictions (25)	D
″	2.3.1	Calabrese	Supports proposed remedy (28)	A
″	2.4.1	Finch	Public input on cleanup guideline (29)	*
″	2.4.2	″	Reason for comment period extension (30)	B
″	2.4.3	″	F.A.C.T.S. does not support 60 pCi/g cleanup guideline for uranium (33)	C
″	2.5.1	Krieger	How did subsurface contamination occur at Building 14? (35)	*
″	2.6.1	Rauch	F.A.C.T.S. lawsuit(35 & 36)	*
″	2.6.2	"	Advocates cleanup criteria from SDMP (36 & 37)	F
″	2.6.3	"	Radon exposure (37)	*
"	2.6.4	"	Does not support 60 pCi/g cleanup guideline for uranium (37-39)	C
"	2.7.1	Bruce	Lack of research on low level radioactivity (41)	*
"	2.7.2	″	Something wrong with the regulations when natural radiation is considered (43)	*
"	2.8.1	Lambert	Use of independent verification contractor (IVC) (45)	H
"	2.8.2	″	Future land use (46)	C
"	2.8.3	″	Citation of NYSDEC comments. See response to NYSDEC comments (47)	—
"	2.9.1	Hanobeck	Testing for contamination near schools (50)	I
"	2.9.2	″	Contamination under Building 14 (51)	D
"	2.9.3	″	Precautions during remediation (57)	*
"	2.10.1	Lee	Questions need for cleanup (60)	*
"	2.11.1	Dooley	Supports USACE technical findings (62)	A
"	2.12.1	Krieger	Toxicity of uranium (66)	*
"	2.12.2	″	Off-site disposal of material from Linde (67)	*
"	2.13.1	Finch	Off-site disposal of material from Linde (68)	*
"	2.14.1	Calabrese	Supports proposed remedy (69 & 70)	A
"	2.15.1	Swanick	Supports proposed remedy (71-73)	A
"	2.15.2	"	Building 14 needs to be resolved (74)	D

Date	Comment No.	Comment from	Description	Generic Comment/ Response ID (if applicable)
"	2.16.1	Rodenmocker	Contamination in Towmile Creek (75)	I
"	2.17.1	Kreiger	Questions need for cleanup (77)	*
"	2.18.1	Bazinat	Supports proposed remedy (82)	A
		Written Comments		
4/7/99	3.1	Melrose	Uranium cleanup guideline for Linde Site soils	C
4/16/99	4.1	Conroy (Praxair)	Uranium cleanup guideline for Linde Site soils	C
"	4.2	"	10 mrem/yr exposure limit	C
"	4.3	Dooley (Praxair consultant, letter to Praxair 3/2/99)	Uranium cleanup guideline for Linde Site soils	C
"	4.4	"	Dose estimates and comparison to government guidance values	*
"	4.5	"	Use of the sum of the ratios method in soils remediation	*
"	4.6	"	Uranium toxicity	*
"	4.7	"	Reference to cleanup guidelines used previously at the site	F
"	4.8	"	Concurrence in finding that groundwater cleanup is not required	A, E
"	4.9	"	Use of Reasonable Maximum Exposure (RME) in risk estimates	*
"	4.10	"	Applicable or Relevant and Appropriate Requirements (ARARs) for site cleanup	F
"	4.11	"	Reference to cleanup guidelines used previously at the site	F
4/20/99	5.1	Tobe	Postponement of public meeting and extension of comment period	B
"	5.2	"	Cleanup standards	F
"	5.3	"	Unrestricted use of the land consistent with Tonawanda Master Plan	C
4/22/99	6.1	LaFalce	Uranium cleanup guideline for Linde Site soils	C
"	6.2	"	Consensus of stakeholders	*
"	6.3	"	Extension of comment period	B
4/28/99	7.1	Chapman	Contamination in vicinity of Linde Site	I
4/30/99	8.1	Merges	Use of NYSDEC TAGM as a “To be Considered” in criteria for site cleanup	F
"	8.2	"	Future land use assumptions	C
"	8.3	"	Need for radiological risk assessment	*
"	8.4	"	Need for licensing the site after remediation	C
"	8.5	"	Need for licensing the site after remediation	C
"	8.6	"	Demonstration of the protectiveness of the 15 pCi/g cleanup criteria in subsurface soils and EPA guidance	*
"	8.7	"	Groundwater impacts from past deep well injection	E
"	8.8	"	Institutional controls	D

Date	Comment No.	Comment from	Description	Generic Comment/ Response ID (if applicable)
"	8.9	"	Authority for institutional controls	D
"	8.10	"	Vicinity properties	I
"	8.11	"	Use of independent verification contractor (IVC)	H
"	8.12	"	Application of cleanup criteria under MARSIMM	*
"	8.13	"	Application of cleanup criteria under MARSIMM	*
"	8.14	"	Use of the sum of fractions rule in soil cleanup	*
6/10/99	9.1	Conroy	Disposition of Building 14	D
"	9.2	"	Disposition of Building 14	D
"	9.3	"	Disposition of Building 14	D
"	9.4	"	Disposition of Building 14	D
"	9.5	"	Supports site cleanup guidelines, no ICs	A, D
6/10/99	10.1	Lambert	Use of independent verification contractor (IVC)	H
"	10.2	"	Absence of uranium in regulations	C
"	10.3	"	Uranium cleanup guideline and averaging	C
"	10.4	"	Institutional controls and reliability	D
"	10.5	"	Uranium cleanup guideline	C
"	10.6	"	Building demolition in the future and removal of contaminated soils	D
"	10.7	"	Background radiation	*
"	10.8	"	Institutional controls	D
6/11/99	11.1	Leary	CERCLA jurisdiction	*
"	11.2	"	State and federal ARARs	F
"	11.3	"	Groundwater remediation	E
"	11.4	"	Cleanup guideline for uranium in Linde soils	C
"	11.5	"	Remedial actions undertaken pursuant to Engineering/Evaluation/UST Analysis/EE/CA)	*
"	11.6	"	Disposal of remedial waste	*
"	11.7	"	State and federal permits	C
"	11.8	"	Community acceptance	G
"	11.9	"	Timing of remediation	*

*See specific responses in Section 5

Key:

A = Support for PP; B = Extension of public comment period; C = Residual uranium concentrations and future land use; D = Disposition of Building 14; E = Need for groundwater remediation; F = Consideration of applicable or relevant and appropriate requirements; G = State and community acceptance; H = Need for independent verification contractor (IVC); and I = Other Sites/Potential Sites

4.2 Comment Response ID - B – Extension of Public Comment Period

Includes comments: 1.1.3, 1.2.1, 2.4.2, 5.1, 6.3

Generic comment: Some commenters requested an extension of the public comment period.

Response: A minimum public review period is required under the NCP. The public review period for the Linde Site was extended to allow a 71-day review period ending June 11, 1999.

4.3 Comment Response ID - C - Residual Uranium Concentrations Cleanup and Future Land Use

Includes comments: 1.1.1, 1.2.3, 1.2.4, 1.2.7, 1.3.1, 1.3.2, 1.4.1, 1.4.2, 1.6.1, 1.6.2, 1.6.3, 1.7.1, 1.10.1, 1.11.1, 2.4.3, 2.6.4, 2.8.2, 3.1, 4.1, 4.2, 4.3, 5.3, 6.1, 8.2, 8.4, 8.5, 10.2, 10.3, 10.5, 11.4, 11.7

Generic Comment: A number of comments were received expressing concern and objection over increasing the total uranium cleanup guideline from the 60 pCi/g total uranium proposed by the Department of Energy (DOE) to 600 pCi/g total uranium being proposed by USACE in the Proposed Plan. The DOE criteria would allow for release of the site with no further restrictions. Most commenters felt that the proposed criteria of 600 pCi/g for total uranium would result in restrictions on the use of the site in the future, or even the need to obtain a license to address the residual materials that would remain. The commenters stated that they do not what any restrictions on the site and that it could be used for any purpose in the future, including residential.

Response: The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

4.4 Comment Response ID - D – Disposition Building 14

Includes comments: 2.1.1, 2.2.1, 2.2.2, 2.9.2, 2.15.2, 8.8, 8.9, 9.1, 9.2, 9.3, 9.4, 9.5, 10.4, 10.6, 10.8

Generic Comment: Several comments were received concerning the proposal to leave Building 14 in its current condition with institutional controls being established to prevent inadvertent exposures to the residual contamination remaining at this building location.

Comment Response: The two action alternatives presented in the PP for remediating the Linde Site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to residual contaminants remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

4.5 Comment Response ID - E – Need for Groundwater Remediation

Includes comments: 4.8, 8.7, 11.3

Generic comment: Comments were received concerning how the Proposed Plan addressed the groundwater at the Linde Site.

Response: The original RI, FS and PP for the Linde (Tonawanda) site(s), proposed that no action was warranted to address on-site groundwater. USACE further investigated existing available information relating to the groundwater at the Linde site and presented findings in a document entitled "Synopsis of Historical Information on Linde Effluent Injection Wells" (USACE 1999b). The result of that assessment was also a conclusion that no remediation of the groundwater is warranted. This conclusion was re-stated in the 1999 Linde PP (USACE 1999d). However, based on the comments received during the comment period, USACE has decided to not make a final decision regarding groundwater in this ROD. USACE will further assess the groundwater conditions at the site and address the need for any remediation in a future ROD.

4.6 Comment Response ID - F – Consideration of Relevant and Appropriate Requirements

Includes comments: 1.8.1, 2.6.2, 4.7, 4.10, 4.11, 5.2, 8.1, 11.2

Generic Comment: Several commenters questioned the selection of relevant and appropriate requirements used in assessing remedies for the Linde Site.

Comment Response: The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site.

Subpart B of 40 CFR Part 192 addresses cleanup of land and buildings contaminated with residual radioactive material from inactive uranium processing sites, and sets standards for residual concentrations of Ra-226 in soil. It requires that radium concentrations shall not exceed background by more than 5 pCi/g in the top 15 cm of soil or 15 pCi/g in any 15 cm layer below the top layer, averaged over an area of 100 m^2.

Subpart B also provides standards for any occupied or habitable building. These standards require that the remedial action shall be and reasonable effort shall be made to:

- achieve an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 Working Level (WL). In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and
- the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.

These 40 CFR Part 192, Subpart B requirements are considered relevant and appropriate to the cleanup of the Linde Site and buildings.

New regulations amending 10 CFR 40, Appendix A, Criterion 6 (6) were promulgated and became effective on June 11, 1999. These regulations were evaluated and determined to not be applicable to the Linde site. However, they were found to be relevant and appropriate for the Linde site since they addressed residual uranium and other radionuclides present at uranium mill sites, similar to the Linde site. 10 CFR 40, Appendix A, Criterion 6(6) requires that residual radioactive materials remaining after remediation will not result in a total effective dose equivalent (TEDE), considering all radionuclides present (e.g., radium, thorium, and uranium) to the average member of the critical group exceeding a benchmark dose established based on cleanup to the radium standards of 5 pCi/g in the top 15 centimeters and 15 pCi/g in subsequent 15 centimeter layers below the top layer. This benchmark dose is then used to establish allowable soil and surface concentration levels for the various radionuclides present. The criterion also states if more than one residual radionuclide is present in the same 100-square-meter area, the sum of the ratios for each radionuclide of concentration present to the concentration limit will not exceed “1” (unity).

USACE evaluated the new standard, the draft NRC guidance included in the Federal Register (Vol. 64, N0. 69, dated April 12, 1999, pp. 17690–17695), and the Linde Radiological Assessment (USACE 1999a). Based on the current understanding by USACE of the new standard and associated guidance,

USACE was able to use the data and information contained in the Linde Radiological Assessment (USACE 1999a) to establish the benchmark doses and associated radionuclide concentration limits for surface cleanups as well as subsurface cleanups. The results in the Linde Radiological Assessment were based on RESRAD runs modeling the conditions at the Linde Site. The document also included what the allowable concentrations would be for various radionuclides to meet dose objectives both with and without cover materials for the most likely scenario at the site, the industrial/commercial scenario. These results are contained in Table 3-3 of the Linde Radiological Assessment. Using those results, USACE was able to derive the benchmark dose for surface cleanup by dividing the 10 mrem/y (no cover) by the 5.7 pCi/g of Ra-226 associated with that dose and then multiplying the result by 5 pCi/g of Ra-226, which results in a benchmark dose of 8.8 mrem/y for surface cleanups. Table 3-3 data was then used to derive the allowable concentrations for the radionuclides, total uranium, and Th-230. The same methodology was used in deriving the same information for subsurface cleanups. The data used were the results in Table 3-3 based on a cover depth of 6 inches. The resulting benchmark dose for subsurface cleanups was calculated to be 4.1 mrem/y. The following tabulates the results of the assessment and what the radionuclide limits are for surface and subsurface cleanups:

	Allowable Residual Concentration Limit for Indicated Benchmark Dose (pCi/g)	
Radionuclide	**Surface: 8.8 mrem/yr**	**Subsurface: 4.1 mrem/yr**
Ra-226	5.0	15
Th-230	14	44
U-total	554	774

During remediation, the actual radionuclide concentrations within a 100 square meter area will be divided by its corresponding concentration limit from the table above. These ratios are then added and must be equal to or less than "1" (unity). If the sum of these ratios exceeds unity, additional soil removal is necessary.

The allowable residual radionuclide concentrations on structure surfaces would be computed for specific structures and the associated exposure scenarios and would be based on meeting the benchmark dose of 8.8 mrem/y for surface cleanups.

4.7 Comment Response ID - G – State and Community Acceptance

Includes comments: 1.2.2, 11.8

Generic Comment: The original comments received indicated that the state and community did not accept the preferred alternative (1) using the 600 pCi/g total uranium cleanup criteria for the soils; and (2) proposing to impose institutional controls on Building 14. Comments made at the second public meeting show support for the revised soil cleanup criteria.

Response: After receipt of the original comments, USACE met with stakeholders and committed to: (1) achieve a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick; (2) conduct a second public meetings; and (3) defer a decision of Building 14 and the groundwater operable units. Comments made at the second public meeting showed support for the soil remediation alternative where the cleanup criteria for the soils at the Linde site will be (1) the removal of all soils exceeding the total uranium cleanup criteria of 600 pCi/g;

(2) the removal of soils exceeding the 40 CFR 192 standards for radium, which includes consideration of thorium, when averaged over 100 square meters; and (3) ensuring that the total uranium concentration remaining in the soils after remediation to the first two standards is equal to or less than 60 pCi/g when averaged over a soil volume of 2,000 square meters by 3 meters thick.

The NYSDEC does not concur with the selected remedy for the Linde Site. The concerns expressed by the NYSDEC and USACE's responses to and consideration of these concerns in making the decision on the selected remedy are included in Attachments to the ROD.

4.8 Comment Response ID - H – Need for Independent Verification Contractor

Includes comments: 1.2.8, 2.1.2, 2.1.3, 2.8.1, 8.11, 10.1

Generic Comment: A number of comments were received indicating that USACE should have an independent verification contractor (IVC) come in after the remedial work is completed to verify that the area has been remediated properly.

Comment Response: All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary.

4.9 Comment Response ID - I – Other Sites

Includes comments: 1.2.9, 1.3.3, 1.5.1, 1.5.2, 1.6.2, 2.9.1, 2.16.1, 7.1, 8.10

Generic Comment: A number of comments were received with respect to issues associated with other sites. Some of the sites and issues associated with other sites include: Two Mile Creek, East Park near St. Timothy's church, radionuclide cleanup at Ashland 2, the guidelines for the Colonie site, testing of contamination near schools, contamination in properties adjacent to Linde, and Linde vicinity properties not adjacent to the Linde site.

Comment Response: This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time. The other sites and issues raised are not within the scope of this decision document. However, USACE will respond to each of them under a separate correspondence.

5. RESPONSES TO SPECIFIC COMMENTS

This section of the responsiveness summary presents responses to specific comments contained within the comment documents, included in the back of this appendix as Attachments 1 through 11.

5.1 Responses to April 22, 1999 Public Meeting Comments (Attachment 1)

5.1.1 Response to Congressman LaFalce Comments

5.1.1.1 - (Letter from Congressman LaFalce, transcript pages 21 & 22): USACE listened to the concerns of commenters addressing the 600 pCi/g cleanup guideline for soil at Linde. USACE has clarified the uranium guidelines and committed to a total uranium cleanup guideline for Linde that will limit total uranium to a maximum of 600 pCi/g and 60 pCi/g when averaged over a soil volume of 2,000 square meter (m2) by 3 meters (m) thick. Subsequently, 10 CFR 40 Appendix A Criterion 6(6) was promulgated. Compliance with that standard will meet or exceed the previous commitment to the public.

5.1.1.2 - (Letter from Congressman LaFalce, transcript page 22): USACE is committed to ensuring that the cleanup of the Linde Site is protective of public health and the environment. USACE has listened to the concerns raised in comments on the PP and has clarified and is committed to a cleanup level that is consistent with commitments made to the community in the past.

5.1.1.3 - (Letter from Congressman LaFalce, transcript page 23): USACE has conducted a second public meeting on the PP and extended the comment period until June 11, 1999, allowing public comments for a period of 71 days.

5.1.2 Responses to Tobe Comments

5.1.2.1 - (Transcript pages 23-25) The comment period was extended until June 11, 1999.

5.1.2.2 - (Transcript pages 25 & 26) USACE is conducting the decision-making process for the Linde Site in accordance with CERCLA. Under CERCLA, a state must be given notice of a proposed plan for remedial action and an opportunity to comment on it.

In addition, the proposed remedy selection must be accompanied by a response to comments submitted by the State, including an explanation regarding any decision that does not attain a state ARAR.

If the response action is being undertaken pursuant to a consent degree under Section 106 of CERCLA, then the lead agency must provide an opportunity for the State to concur or not concur in the remedy selection if the remedy selected does not attain a state ARAR.

The Linde cleanup is not being undertaken pursuant to a CERCLA Section 106 Consent Decree. Therefore, the requirement that the state concur in the remedy selection does not apply. Rather, the state involvement requirements found in 40 CFR §300.515(h) need to be followed, along with the process for remedy selection detailed in 40 CFR §300.430(f).

Under 40 CFR §300.430(f), state acceptance of the remedy is a modifying criterion that must be considered in remedy selection. That is to say, it is not a primary balancing criterion for remedy selection, but after all comments are evaluated, state acceptance may prompt modifications to the preferred remedy. The rule directs that state concerns that shall be addressed include the following:

The state's position and key concerns related to the preferred alternative and other alternatives; and state comments on ARARs or the proposed use of waivers.

Under the procedure set out in 40 CFR §300.430(f) for remedy selection, the lead agency, in conjunction with the support agency, is to identify a preferred alternative and present it to the public in a proposed plan for review and comment. Next, the lead agency is to review the public comments and consult with the state in order to determine if the alternative remains the most appropriate remedial action for the site. The lead agency makes the final remedy selection.

One component of the community acceptance criterion is issuing the Proposed Plan for public comment. Once the USACE receives comments, it can assess whether the community accepts the Plan or would like to see it changed. Community acceptance is a modifying criterion, in that it can be used to modify the final remedy selected. It often is not evaluated or assessed until after receipt of comments on the Proposed Plan.

5.1.2.3 - (Transcript page 26) Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.1.2.4 – (Transcript page 26) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.2.5 – (Transcript page 27) Although there is no requirement, the proposed remedy is expected to achieve the 10 mrem standard for anticipated future industrial/commercial land use.

5.1.2.6 – (Transcript page 27) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.2.7 – (Transcript page 28) USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick. Subsequent to that commitment, an addition to 10 CFR Part 40 Appendix A Criterion 6(6) was promulgated. Compliance with that standard will meet or exceed the previous commitments to the public. This will allow for release of the property (excluding Building 14, to be addressed separately).

5.1.2.8 – (Transcript page 28) All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary.

5.1.2.9 – (Transcript Pages 28 & 29) Questions concerning the cleanup of Ashland 2 are beyond the scope of this action, however, USACE is available to discuss these questions if you would contact the public information office.

5.1.3 Responses to Calabrese Comments

5.1.3 1 – (Transcript page 31) The USACE remediation will be protective of human health and the environment.

5.1.3.2 – (Transcript page 31) USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick. Subsequent to that commitment, an addition to 10 CFR Part 40 Appendix A Criterion 6(6) was promulgated. Compliance with that standard will meet or exceed the previous commitments to the public. This will allow for release of the property (excluding Building 14, to be addressed separately).

5.1.3.3 – (Transcript page 32) Questions concerning the cleanup of Ashland 2 are beyond the scope of this action, however, USACE is available to discuss these questions if you would contact the public information office.

5.1.4 Responses to Krieger Comments

5.1.4.1 – (Transcript page 34) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.4.2 – (Transcript page 35) All action against the Corps of Engineers under the F.A.C.T.S. lawsuit have been dismissed.

5.1.4.3 – (Transcript page 35) All Action against the Corps of Engineers under the F.A.C.T.S. lawsuit have been dismissed.

5.1.4.4 – (Transcript page 36) This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time.

5.1.5 Responses to Hausrath Comments

5.1.5.1 – (Transcript page 43) This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time.

5.1.5.2 – (Transcript page 44) This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time.

5.1.6 Responses to Conroy Comments

5.1.6.1-3– (Transcript pages 45 & 46) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.7 Response to Bass-Early Comment

5.1.7.1 – (Transcript page 51) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.8 Response to Finch Comment

5.1.8.1 – (Transcript page 52) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must

be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.9 Responses to Schafer Comments

5.1.9.1 – (Transcript page 54) The USACE remedy proposed for the Linde Site has been determined to be protective of human health and the environment.

5.1.9.2 – (Transcript page 55) The remedy proposed for the Linde Site includes the remediation of the utility tunnels on the site.

5.1.9.3 – (Transcript pages 55 & 56) The remedy proposed for the Linde Site includes the remediation of the utility tunnels on the site and the buried vault next to Building 57.

5.1.10 Response to Swanick Comment

5.1.10.1– (Transcript pages 60-63) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.1.11 Response to Morford Comments

5.1.11.1– (Transcript page 65) USACE is moving ahead with the most cost effective and protective remedy available to resolve issues at the Linde Site.

5.1.11.2 –(Transcript page 65) During remedial action, health and safety procedures will be followed, including monitoring within excavations and around the property perimeter to ensure that workers and the general public are not exposed to dust from the remedial effort.

5.2 Responses to June 3, 1999 Public Meeting Comments (Attachment 2)

5.2.1 Responses to Tobe Comments

5.2.1.1 - (Transcript page 21) Comment noted.

5.2.1.2 - (Transcript page 22) Comment noted. All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary.

5.2.1.3 - (Transcript page 23) Comment noted.

5.2.2 Responses to Swanick Comments

5.2.2.1 - (Transcript page 24) Comment noted.

5.2.2.2 - (Transcript page 25) The two action alternatives presented in the PP for remediating the Linde site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to residual contaminants remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.2.3 Response to Calabrese Comment

5.2.3.1 – (Transcript page 28) Comment noted.

5.2.4 Responses to Finch Comments

5.2.4.1 – (Transcript page 29) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.2.4.2 – (Transcript page 30) The comment period was extended 30 days due to the receipt of a request for an extension. An additional 11 days were added to allow for comments after the second public meeting.

5.2.4.3 – (Transcript page 33) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing

concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.2.5 Response to Krieger Comment

5.2.5.1 – (Transcript page 35) We have information which indicates that Building 14 was constructed in the 1930's, however we do not have any specific information that explains how the radioactive material came to be under the building. Potential explanations for the material's location are that radioactive material were present in the fill that was placed during construction of the building or that material leaked through the floor or out of floor drains while operations took place inside of the building.

5.2.6 Responses to Rauch Comments

5.2.6.1 – (Transcript pages 35 & 36) All action against the Corps of Engineers under the F.A.C.T.S. lawsuit have been dismissed.

5.2.6.2 – (Transcript pages 36 & 37) The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site.

Subpart B of 40 CFR Part 192 addresses cleanup of land and buildings contaminated with residual radioactive material from inactive uranium processing sites, and sets standards for residual concentrations of Ra-226 in soil. It requires that radium concentrations shall not exceed background by more than 5 pCi/g in the top 15 cm of soil or 15 pCi/g in any 15 cm layer below the top layer, averaged over an area of 100 m^2.

Subpart B also provides standards for any occupied or habitable building. These standards require that the remedial action shall be and reasonable effort shall be made to:

- achieve an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 Working Level (WL). In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and
- the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.

These 40 CFR Part 192, Subpart B requirements are considered relevant and appropriate to the cleanup of the Linde Site and buildings.

New regulations amending 10 CFR 40, Appendix A, Criterion 6 (6) were promulgated and became effective on June 11, 1999. These regulations were evaluated and determined to not be applicable to the Linde site. However, they were found to be relevant and appropriate for the Linde site since they addressed residual uranium and other radionuclides present at uranium mill sites, similar to the Linde site. 10 CFR 40, Appendix A, Criterion 6(6) requires that residual radioactive materials remaining after remediation will not result in a total effective dose equivalent (TEDE), considering all radionuclides present (e.g., radium, thorium, and uranium) to the average member of the critical group exceeding a benchmark dose established based on cleanup to the radium standards of 5 pCi/g in the top 15 centimeters and 15 pCi/g in subsequent 15 centimeter layers below the top layer. This benchmark dose is then used to establish allowable soil and surface concentration levels for the various radionuclides present. The criterion also states if more than one residual radionuclide is present in the same 100-square-meter area, the sum of the ratios for each radionuclide of concentration present to the concentration limit will not exceed "1" (unity).

USACE evaluated the new standard, the draft NRC guidance included in the Federal Register (Vol. 64, N0. 69, dated April 12, 1999, pp. 17690–17695), and the Linde Radiological Assessment (USACE 1999a). Based on the current understanding by USACE of the new standard and associated guidance, USACE was able to use the data and information contained in the Linde Radiological Assessment (USACE 1999a) to establish the benchmark doses and associated radionuclide concentration limits for surface cleanups as well as subsurface cleanups. The results in the Linde Radiological Assessment were based on RESRAD runs modeling the conditions at the Linde Site. The document also included what the allowable concentrations would be for various radionuclides to meet dose objectives both with and without cover materials for the most likely scenario at the site, the industrial/commercial scenario. These results are contained in Table 3-3 of the Linde Radiological Assessment. Using those results, USACE was able to derive the benchmark dose for surface cleanup by dividing the 10 mrem/y (no cover) by the 5.7 pCi/g of Ra-226 associated with that dose and then multiplying the result by 5 pCi/g of Ra-226, which results in a benchmark dose of 8.8 mrem/y for surface cleanups. Table 3-3 data was then used to derive the allowable concentrations for the radionuclides, total uranium, and Th-230. The same methodology was used in deriving the same information for subsurface cleanups. The data used were the results in Table 3-3 based on a cover depth of 6 inches. The resulting benchmark dose for subsurface cleanups was calculated to be 4.1 mrem/y. The following tabulates the results of the assessment and what the radionuclide limits are for surface and subsurface cleanups:

	Allowable Residual Concentration Limit for Indicated Benchmark Dose (pCi/g)	
Radionuclide	**Surface: 8.8 mrem/yr**	**SubSurface: 4.1 mrem/yr**
Ra-226	5.0	15
Th-230	14	44
U-total	554	774

During remediation, the actual radionuclide concentrations within a 100 square meter area will be divided by its corresponding concentration limit from the table above. These ratios are then added and must be equal to or less than "1" (unity). If the sum of these ratios exceeds unity, additional soil removal is necessary.

The allowable residual radionuclide concentrations on structure surfaces would be computed for specific structures and the associated exposure scenarios and would be based on meeting the benchmark dose of 8.8 mrem/y for surface cleanups.

5.2.6.3 – (Transcript page 37) Radon has been considered and standards are included in 40 CFR Part 192 covering radon.

5.2.6.4 – (Transcript page 37-39) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.2.7 Responses to Bruce Comments

5.2.7.1 – (Transcript page 41) The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site.

Subpart B of 40 CFR Part 192 addresses cleanup of land and buildings contaminated with residual radioactive material from inactive uranium processing sites, and sets standards for residual concentrations of Ra-226 in soil. It requires that radium concentrations shall not exceed background by more than 5 pCi/g in the top 15 cm of soil or 15 pCi/g in any 15 cm layer below the top layer, averaged over an area of 100 m^2.

Subpart B also provides standards for any occupied or habitable building. These standards require that the remedial action shall be and reasonable effort shall be made to:

- achieve an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 Working Level (WL). In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and
- the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.

These 40 CFR Part 192, Subpart B requirements are considered relevant and appropriate to the cleanup of the Linde Site and buildings.

New regulations amending 10 CFR 40, Appendix A, Criterion 6 (6) were promulgated and became effective on June 11, 1999. These regulations were evaluated and determined to not be applicable to the Linde site. However, they were found to be relevant and appropriate for the Linde site since they addressed residual uranium and other radionuclides present at uranium mill sites, similar to the Linde site. 10 CFR 40, Appendix A, Criterion 6(6) requires that residual radioactive materials remaining after remediation will not result in a total effective dose equivalent (TEDE), considering all radionuclides present (e.g., radium, thorium, and uranium) to the average member of the critical group exceeding a benchmark dose established based on cleanup to the radium standards of 5 pCi/g in the top 15 centimeters and 15 pCi/g in subsequent 15 centimeter layers below the top layer. This benchmark dose is then used to establish allowable soil and surface concentration levels for the various radionuclides present. The criterion also states if more than one residual radionuclide is present in the same 100-square-meter area, the sum of the ratios for each radionuclide of concentration present to the concentration limit will not exceed "1" (unity).

USACE evaluated the new standard, the draft NRC guidance included in the Federal Register (Vol. 64, N0. 69, dated April 12, 1999, pp. 17690–17695), and the Linde Radiological Assessment (USACE 1999a). Based on the current understanding by USACE of the new standard and associated guidance, USACE was able to use the data and information contained in the Linde Radiological Assessment (USACE 1999a) to establish the benchmark doses and associated radionuclide concentration limits for surface cleanups as well as subsurface cleanups. The results in the Linde Radiological Assessment were based on RESRAD runs modeling the conditions at the Linde Site. The document also included what the allowable concentrations would be for various radionuclides to meet dose objectives both with and without cover materials for the most likely scenario at the site, the industrial/commercial scenario. These results are contained in Table 3-3 of the Linde Radiological Assessment. Using those results, USACE was able to derive the benchmark dose for surface cleanup by dividing the 10 mrem/y (no cover) by the 5.7 pCi/g of Ra-226 associated with that dose and then multiplying the result by 5 pCi/g of Ra-226, which results in a benchmark dose of 8.8 mrem/y for surface cleanups. Table 3-3 data was then used to derive the allowable concentrations for the radionuclides, total uranium, and Th-230. The same methodology was used in deriving the same information for subsurface cleanups. The data used were the results in Table 3-3 based on a cover depth of 6 inches. The resulting benchmark dose for subsurface cleanups was calculated to be 4.1 mrem/y. The following tabulates the results of the assessment and what the radionuclide limits are for surface and subsurface cleanups:

	Allowable Residual Concentration Limit for Indicated Benchmark Dose (pCi/g)	
Radionuclide	**Surface: 8.8 mrem/yr**	**SubSurface: 4.1 mrem/yr**
Ra-226	5.0	15
Th-230	14	44
U-total	554	774

During remediation, the actual radionuclide concentrations within a 100 square meter area will be divided by its corresponding concentration limit from the table above. These ratios are then added and must be equal to or less than "1" (unity). If the sum of these ratios exceeds unity, additional soil removal is necessary.

The allowable residual radionuclide concentrations on structure surfaces would be computed for specific structures and the associated exposure scenarios and would be based on meeting the benchmark dose of 8.8 mrem/y for surface cleanups.

5.2.7.2 – (Transcript page 43) Comment noted.

5.2.8 Responses to Lambert Comments

5.2.8.1 – (Transcript page 45) All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary.

5.2.8.2 – (Transcript page 46) The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR

Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.2.8.3 – (Transcript page 47) The circumstances and history of the site have been carefully reviewed and it has been determined that 40 CFR Part 192 is relevant and appropriate for the site.

5.2.9 Responses to Hanobeck Comments

5.2.9.1 – (Transcript page 50) This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time.

5.2.9.2 – (Transcript page 51) We have information which indicates that Building 14 was constructed in the 1930's, however we do not have any specific information that explains how the radioactive material came to be under the building. Potential explanations for the materials location are that radioactive material were present in the fill that was placed during construction of the building or that material leaked through the floor or out of floor drains while operations took place inside of the building.

5.2.9.3 – (Transcript page 57) During remedial action, health and safety procedures will be followed, including monitoring within excavations and around the property perimeter to ensure that workers and the general public are not exposed to dust from the remedial effort.

5.2.10 Response to Lee Comment

5.2.10.1 –(Transcript page 60) USACE will proceed with the remediation of this property as required under CERCLA. The remedial action will be the most cost effective remedy that is considered to be protective of human health and the environment.

5.2.11 Response to Dooley Comment

5.2.11.1 – (Transcript page 62) Comment noted.

5.2.12 Response to Krieger Comment

5.2.12.1 – (Transcript page 66) During the assessment, the toxic as well as cancer risks posed by uranium were considered. The resulting cleanup concentration for uranium at the site will be protective to human health, for both cancer and toxic concerns.

5.2.12.2 - (Transcript page 67) No.

5.2.13 Response to Finch Comment

5.2.13.1 – (Transcript page 8) Comment noted.

5.2.14 Response to Calabrese Comment

5.2.14.1 –(Transcript pages 69-71) Comment noted.

5.2.15 Responses to Swanick Comments

5.2.15.1 –(Transcript pages 71-73) Comment noted.

5.2.15.2 – (Transcript page 74) The two action alternatives presented in the PP for remediating the Linde site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to residual contaminants remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.2.16 Response to Rodenmocker Comment

5.2.16.1 – (Transcript page 75) This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time.

5.2.17 Response to Kreiger Comment

5.2.17.1 –(Transcript page 77) USACE will proceed with the remediation of this property as required under CERCLA. The remedial action will be the most cost effective remedy that is considered to be protective of human health and the environment.

5.2.18 Response to Bazinat Comment

5.2.18.1 –(Transcript page 82) Comment noted.

5.3 Written Comments from George Melrose (Attachment 3)

5.3.1- The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.4 Written Comments from Dennis Conroy (Attachment 4)

5.4.1 - The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.4.2- USACE believes that the most reasonable future use of this site is commercial/industrial. Under these types of uses, the remedy will achieve the 10 mrem/yr standard.

5.4.3- Comment noted. USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick. Subsequent to that commitment, an addition to 10 CFR Part 40 Appendix A Criterion 6(6) was promulgated. Compliance with that standard will meet or exceed the previous commitments to the public. This will allow for release of the property (excluding Building 14, to be addressed separately).

5.4.4- The comment on the referenced supporting document is noted.

5.4.5- The comment on the referenced supporting document is noted.

5.4.6- The comment on the referenced supporting document is noted.

5.4.7- The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site. DOE Orders are unpromulgated and therefore not considered applicable or relevant and appropriate to the CERCLA remediation of the Linde Site.

5.4.8- Comment noted. The original RI, FS and PP for the Linde (Tonawanda) site(s), proposed that no action was warranted to address on-site groundwater. USACE further investigated existing available information relating to the groundwater at the Linde site and presented findings in a document entitled “Synopsis of Historical Information on Linde Effluent Injection Wells” (USACE 1999b). The result of that assessment was also a conclusion that no remediation of the groundwater is warranted. This conclusion was re-stated in the 1999 Linde PP (USACE 1999d). However, based on the comments received during the comment period, USACE has decided to not make a final decision regarding groundwater in this ROD. USACE will further assess the groundwater conditions at the site and address the need for any remediation in a future ROD.

5.4.9- “BRA” has been defined in the ROD.

5.4.10- RME’s were used in the baseline risk assessment.

5.4.11-12- The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site.

Neither DOE Orders nor NYSDEC TAGMs are properly promulgate regulations. Therefore, they are not potential ARARs for the site, making it unnecessary to discuss them in this document.

5.5 Written Comments from Tobe (Attachment 5)

5.5.1 A minimum public review period is required under the NCP. The public review period for the Linde Site was extended to allow a 71-day review period ending June 11, 1999.

5.5.2-3- The standards found in 40 CFR Part 192 are not considered applicable because the regulation is only applicable to specific sites designated under UMTRCA. However, USACE has determined that 40 CFR Part 192 is relevant and appropriate to the cleanup of the Linde Site. This determination was made based on the similarity of the uranium processing activities and resulting radionuclides found in the waste after processing at uranium mill sites where the regulation is applicable. In addition, the requirements are well suited to the site.

Subpart B of 40 CFR Part 192 addresses cleanup of land and buildings contaminated with residual radioactive material from inactive uranium processing sites, and sets standards for residual concentrations of Ra-226 in soil. It requires that radium concentrations shall not exceed background by more than 5 pCi/g in the top 15 cm of soil or 15 pCi/g in any 15 cm layer below the top layer, averaged over an area of 100 m^2.

Subpart B also provides standards for any occupied or habitable building. These standards require that the remedial action shall be and reasonable effort shall be made to:

- achieve an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 Working Level (WL). In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and
- the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.

These 40 CFR Part 192, Subpart B requirements are considered relevant and appropriate to the cleanup of the Linde Site and buildings.

New regulations amending 10 CFR 40, Appendix A, Criterion 6 (6) were promulgated and became effective on June 11, 1999. These regulations were evaluated and determined to not be applicable to the Linde site. However, they were found to be relevant and appropriate for the Linde site since they addressed residual uranium and other radionuclides present at uranium mill sites, similar to the Linde site. 10 CFR 40, Appendix A, Criterion 6(6) requires that residual radioactive materials remaining after remediation will not result in a total effective dose equivalent (TEDE), considering all radionuclides present (e.g., radium, thorium, and uranium) to the average member of the critical group exceeding a benchmark

dose established based on cleanup to the radium standards of 5 pCi/g in the top 15 centimeters and 15 pCi/g in subsequent 15 centimeter layers below the top layer. This benchmark dose is then used to establish allowable soil and surface concentration levels for the various radionuclides present. The criterion also states if more than one residual radionuclide is present in the same 100-square-meter area, the sum of the ratios for each radionuclide of concentration present to the concentration limit will not exceed "1" (unity).

USACE evaluated the new standard, the draft NRC guidance included in the Federal Register (Vol. 64, N0. 69, dated April 12, 1999, pp. 17690–17695), and the Linde Radiological Assessment (USACE 1999a). Based on the current understanding by USACE of the new standard and associated guidance, USACE was able to use the data and information contained in the Linde Radiological Assessment (USACE 1999a) to establish the benchmark doses and associated radionuclide concentration limits for surface cleanups as well as subsurface cleanups. The results in the Linde Radiological Assessment were based on RESRAD runs modeling the conditions at the Linde Site. The document also included what the allowable concentrations would be for various radionuclides to meet dose objectives both with and without cover materials for the most likely scenario at the site, the industrial/commercial scenario. These results are contained in Table 3-3 of the Linde Radiological Assessment. Using those results, USACE was able to derive the benchmark dose for surface cleanup by dividing the 10 mrem/y (no cover) by the 5.7 pCi/g of Ra-226 associated with that dose and then multiplying the result by 5 pCi/g of Ra-226, which results in a benchmark dose of 8.8 mrem/y for surface cleanups. Table 3-3 data was then used to derive the allowable concentrations for the radionuclides, total uranium, and Th-230. The same methodology was used in deriving the same information for subsurface cleanups. The data used were the results in Table 3-3 based on a cover depth of 6 inches. The resulting benchmark dose for subsurface cleanups was calculated to be 4.1 mrem/y. The following tabulates the results of the assessment and what the radionuclide limits are for surface and subsurface cleanups:

	Allowable Residual Concentration Limit for Indicated Benchmark Dose (pCi/g)	
Radionuclide	**Surface: 8.8 mrem/yr**	**SubSurface: 4.1 mrem/yr**
Ra-226	5.0	15
Th-230	14	44
U-total	554	774

During remediation, the actual radionuclide concentrations within a 100 square meter area will be divided by its corresponding concentration limit from the table above. These ratios are then added and must be equal to or less than "1" (unity). If the sum of these ratios exceeds unity, additional soil removal is necessary.

The allowable residual radionuclide concentrations on structure surfaces would be computed for specific structures and the associated exposure scenarios and would be based on meeting the benchmark dose of 8.8 mrem/y for surface cleanups.

5.6 Written Comments from La Falce (Attachment 6)

5.6.1- The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.6.2- After receipt of the original comments, USACE met with stakeholders and had decided to: (1) achieving a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick; (2) conducting a second public meetings; and (3) deferring a decision of Building 14 and the groundwater operable units. Comments made at the second public meeting showed support for the soil remediation alternative where the cleanup criteria for the soils at the Linde site would be (1) the removal of all soils exceeding the total uranium cleanup criteria of 600 pCi/g; (2) the removal of soils exceeding the 40 CFR 192 standards for radium, which includes consideration of thorium, when averaged over 100 square meters; and (3) ensuring that the total uranium concentration remaining in the soils after remediation to the first two standards is equal to or less than 60 pCi/g when averaged over a soil volume of 2,000 square meters by 3 meters thick. Subsequent to that commitment, an addition to 10 CFR Part 40 Appendix A, Criterion 6(6) was promulgated. Compliance with that standard will meet or exceed the previous commitment to the public.

5.6.3- Comment noted.

5.7 Written Comment from Chapman (Attachment 7)

5.7.1- This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at

the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time

5.8 Written Comments from Merges (Attachment 8)

5.8.1- It is USACE's position that the adequacy of the remedy selected and applied will be measured by evaluating compliance with the ARARs and the risk based uranium cleanup criteria, not TAGM 4003. However, USACE understands what NYSDEC must do to address the NYS administrative guidelines and believes that implementation of the preferred remedy will result in a level of protectiveness at the Linde Site is acceptable to the State.

5.8.2- It is USACE's position that the implementation of a remedial action in compliance with 40 CFR Part 192 and 10 CFR Part 40, Appendix A, Criterion 6(6) will allow for future unrestricted use, including residential, at the Linde Site. In addition, USACE believes that when NYSDEC completes their assessment, NYSDEC will come to the same conclusion.

5.8.3- The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR 192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.8.4-5- All material present at the Linde Site is considered pre-1978 byproduct material that is not subject to NRC jurisdiction. It is therefore, by definition, not source material and, in accordance with a March 2, 1998 letter from the NRC specifically addressing the Linde site, not subject to license requirements to remain at the site or be handled.

In addition there are no NRC rules or regulations that would preclude disposal of the materials in a RCRA disposal facility. However, acceptance at such a facility would be subject to its operating permit and the agreement of the state agency that regulates the facility's permit compliance.

5.8.6- The circumstances and history of the site have been carefully reviewed and it has been determined that 40 CFR Part 192 and 10 CFR Part 40, Appendix A, Criterion 6(6) are relevant and appropriate for the site.

5.8.7- The original RI, FS and PP for the Linde (Tonawanda) site(s), proposed that no action was warranted to address on-site groundwater. USACE further investigated existing available information relating to the groundwater at the Linde site and presented findings in a document entitled "Synopsis of Historical Information on Linde Effluent Injection Wells" (USACE 1999b). The result of that assessment was also a conclusion that no remediation of the groundwater is warranted. This conclusion was re-stated in the 1999 Linde PP (USACE 1999d). However, based on the comments received during the comment period, USACE has decided to not make a final decision regarding groundwater in this ROD. USACE will further assess the groundwater conditions at the site and address the need for any remediation in a future ROD.

5.8.8-9- The two action alternatives presented in the PP for remediating the Linde site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to residual contaminants remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.8.10- This ROD only addresses specific media and areas of the Linde site and its immediately adjacent properties. Issues raised regarding health problems, Building 14, the groundwater at the site or other properties off the current Praxair property are not within the scope of this decision document. Those issues will be addressed separately, if appropriate, at a future time

5.8.11- All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary.

5.8.12- USACE will apply MARSSIM techniques

5.8.13- Comment noted.

5.8.14- Comment noted.

5.8.15- Comment noted.

5.9 Written Comments from Conroy (Attachment 9)

5.9.1-4- The two action alternatives presented in the PP for remediating the Linde site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to residual contaminants remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.9.5- Comment noted. USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.10 Written Comments from Lambert (Attachment 10)

5.10.1 All remediation efforts conducted at the Linde site will be monitored and verified by government personnel in accordance with the USACE Quality Assurance Program. In addition, NYSDEC will be conducting independent assessments of the remedial work. USACE believes that with adherence to the Quality Assurance Program and the independent assessment by the state, the use of an Independent Verification Contractor is unnecessary

5.10.2-3- The cleanup criteria proposed by USACE was developed to provide for an acceptable level of protection in accordance with CERCLA and was based on an industrial exposure scenario, which is the most likely future land use. The proposed criteria were the standards in 40 CFR

192 for radium, which includes consideration of thorium, and 600 pCi/g total uranium. Based on modeling results, remediation of the site to the 40 CFR 192 criteria and the cleanup level of 600 pCi/g for total uranium should result in a residual total uranium concentration of 60 pCi/g, or less, when averaged over a soil volume of 2,000 square meters by 3 meters thick. The expected residual total uranium concentration in the soils is equal to or less than the earlier DOE recommended guideline of 60 pCi/g for total uranium in residual soils that would allow for release for residential use and no further radiological restrictions. After consideration of these concerns and the modeling results, USACE agreed to commit to a post-remedial total uranium concentration in the soils of 60 pCi/g when averaged over a soil volume of 2,000 square meters by three (3) meters thick.

On June 11, 1999, subsequent to the release of the PP, an amendment to 10 CFR 40, Appendix A, Criterion 6(6) became effective making the use of a site specific uranium guideline unnecessary. That regulation requires that remaining byproduct material containing concentrations of radionuclides other than radium, such as uranium in the soil, and surface activity on remaining structures, do not result in a total effective dose equivalent exceeding the benchmark dose, which is the dose associated with cleanup to the radium standards, and must be as low as reasonably achievable. While the regulation is not applicable, it is considered relevant and appropriate. USACE believes that compliance with that regulation and 40 CFR Part 192 will require the removal of more material than was anticipated using the site specific guideline and effect a cleanup that meets the original commitment to the community.

5.10.4 The application of the radium cleanup guideline includes the fact that thorium will decay to radium in the future. The cleanup guideline of 5/15 pCi/g of radium includes the removal of thorium such that the standard is met for 1,000 years, based on accepted guidance.

5.10.5-6- The two action alternatives presented in the PP for remediating the Linde site (Alternatives 2 and 4) differed only in the way Building 14 (and soils remaining under the building slabs and footings that contain contaminants exceeding the cleanup guidelines) would be addressed during the remediation process. The preferred alternative presented in the PP, Alternative 4, proposed that the building would remain on the site and that institutional controls would be implemented to protect workers in the building, and future site users from inadvertent exposures to inaccessible residual contaminants (radium, thorium and uranium exceeding the cleanup guidelines) remaining within and under the building. Alternative 2 included the demolition and disposal of the building and residual contaminated soils currently remaining under the building.

Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.10.7 Background concentrations for the radionuclides being addressed at the Linde Site were developed during the remedial investigation and are presented in the RI report.

5.10.8- Comments received during the public comment period, including the public meetings, indicated that the community is concerned about leaving residual contamination on the site, even if institutional controls would prevent exposure to the contaminants.

USACE has decided that additional assessment of the possible remedies for Building 14 (and residual soils under the building) is warranted. Therefore, the building and soils under the building are being excluded from this ROD and will be addressed separately, allowing for the initiation of remedial actions to proceed on the remainder of the site. A future ROD will be developed to address Building 14 and any residual contaminated soils under the building.

5.11 Response to Leary Comments (Attachment 11)

5.11.1 Comment noted.

5.11.2 USACE has considered all potential ARARs submitted by the State of New York, as well as others, during the ARAR selection process. Each requirement, criteria or limitation submitted was evaluated to determine if it was properly promulgated and contained substantive criteria pertaining to the hazardous substances or the circumstances of their release at the site. If they were properly promulgated and pertained to hazardous substances on the site, they were further evaluated to determine if they were applicable or relevant and appropriate. As a result of that analysis, none of requirements, criteria or limitation submitted by New York State were determined to be ARARs for the management units being addressed in this ROD. A final determination has not yet been made regarding the groundwater at the site.

Specifically, the standards found in 6 NYCRR Part 380 and 6 NYCRR Part 375 were not considered applicable because the regulations expressly exclude the material found at Linde, which the NRC has indicated is byproduct material for which no NRC license is required, from the universe of materials regulated. 6 NYCRR Part 380 does not apply to radioactive material whose receipt, possession, use, transfer, and disposal is not subject to general or specific licensing and regulatory control pursuant to the regulations of the NRC or a licensing agency of an agreement state and 6 NYCRR Part 375 excludes source, special nuclear and byproduct materials from the definition of solid and hazardous waste.

In addition, the regulations in both parts are not relevant and appropriate because they do not address situations sufficiently similar to the circumstances of the release or remedial action at Linde and are not well suited for the site. The standards found in 6 NYCRR Part 380 establish standards and the permit process for the future disposal of licensed material into the environment. The standards found in 6 NYCRR Part 375, provide a procedural framework for the implementation of the New York solid and hazardous waste law. Neither part specifically addresses substantive remediation standards pertaining to the radioactive materials found at the Linde site.

The standards found at 10 CFR Part 20 were also evaluated. After a careful analysis, it was determined that the regulation was no applicable and that 40 CFR Part 192 and 10 CFR Part 40, Appendix A, Criterion 6(6) are most relevant and appropriate to the circumstances at the Linde site. The adoption of 40 CFR Part 192 then precluded the use of 10 CFR part 20 pursuant to 10 CFR 20.1401 and 62 Fed. Reg. 39058, at 39073, July 21, 1997.

USACE also evaluated other criteria and documents to determine, in its discretion, if it was appropriate to consider them TBCs. After careful analysis, it was determined that ARARs did exist for the site making it unnecessary to consider those criteria and documents as TBCs. Rather, they would be used as reference material in the course of conducting the remedial action.

The remedy proposed for the Linde site properly reflects the ARARs analysis conducted by USACE and will met all requirements, criteria or limitations found to be applicable or relevant and appropriate.

5.11.3 The groundwater at the Linde Site is not being addressed in the ROD. In response to comments from the state, additional sampling and analysis will be conducted before a final remedy is proposed, if necessary. At that time the ARARs for groundwater will be addressed.

5.11.4 DOE had established a cleanup level of 60 pCi/g total uranium at the Tonawanda site under the authority of DOE Order 5400.5. DOE Order 5400.5 sets forth a method to derive a dose-based uranium cleanup level. The USACE is conducting FUSRAP cleanups under CERCLA, which is a different regulatory authority. Under CERCLA, use of ARARs and risk-based levels for cleanup criteria, when appropriate, is a standard practice.

At the time that USACE issued its plan, no ARAR existed that addressed several areas at Linde that exhibit elevated uranium levels, with little radium and thorium. To derive a cleanup standard for those areas, the USACE used a risk-based method under CERCLA, which resulted in a cleanup level for total uranium of 600 pCi/g. Cleanup to this level will result in cleanup to a risk level of $1 \text{ X } 10^{-5}$, which level is well within the acceptable risk range under CERCLA.

On June 11, 1999, an amendment to 10 CFR Part 40, Appendix A, Criterion 6(6) became effective that addresses such situations. USACE has found that regulation to be relevant and appropriate. USACE will now remediate the site so that the remaining byproduct material containing concentrations of radionuclides other than radium in the soil does not result in a total effective dose exceeding the dose from cleanup of radium contaminated soil to the benchmark dose and must be at levels as low as reasonably achievable.

5.11.5 The ROD identifies and summarizes all prior actions taken at the Linde site by DOE and USACE and the results of those actions. A more detailed explanation of each can be found in the referenced documents located in the administrative record.

Each of the actions taken contributed to the efficient performance of the long-term remedial actions proposed at the site and did not cause the preclusion of a remediation alternative. Each of the actions met the cleanup guidelines set forth in the appropriate EE/CA or NEPA analysis. At that time, no final determinations regarding ARARs had been made.

This ROD addresses all areas of the Linde site, excluding Building 14 and the groundwater, and the remedy selected will ensure compliance with the ARARs at all locations, including areas previously addressed through interim actions.

5.11.6 USACE has, and will continue to, dispose of all material removed from the Linde site at a property licensed or permitted facility. In addition, all required notifications will be made.

In order to insure that the disposal of material is done in conformance with the applicable laws and regulations, prior to shipment, each type of material will be carefully analyzed and appropriately classified. USACE will then provide the information to the receiving facility and require that they provide a written assurance from facility's regulator that the material can be disposed of in that facility.

Regarding the material previously shipped from the Linde site, the NRC has expressly said that the material is "by-product material" that does not required a license for handling from the NRC. In addition, the NRC has clearly stated that they have no NRC rules or regulations that preclude the disposal of the material in a RCRA disposal facility.

5.11.7 USACE has carefully followed the NCP during both removal actions and the final remedial action selection process and will continue to do so. USACE also believe that the permit waiver provisions of Section 121(h) of CERCLA apply to the Linde site.

5.11.8 One component of the community acceptance criterion is issuing the Proposed Plan for public comment. Once the USACE receives comments, it can assess whether the community accepts the Plan or would like to see it changed. Community acceptance is a modifying criterion, in that it can be used to modify the final remedy selected. It often is not evaluated or assessed until after receipt of comments on the Proposed Plan.

5.11.9 USACE has carefully considered all comments received regarding the Proposed Plan and determined that no decision will be made concerning the final remedy for groundwater and Building 14 at this time. Instead, both issues will be assessed further and be the subject of a future ROD process. USACE has further determined that it is not necessary to issue a new proposed plan before going forward with the remaining portions of the preferred alternative as described in the Proposed Plan released March 26, 1999. A new proposed plan is unnecessary since no changes are being made to the those remaining portions of the preferred alternative and the public has had an ample opportunity to comment on them.

ATTACHMENT 1

PUBLIC MEETING COMMENTS
April 22, 1999

U.S. ARMY CORPS OF ENGINEERS

BUFFALO DISTRICT

LINDE FUSRAP SITE

PROPOSED PLAN PUBLIC MEETING
APRIL 22, 1999

LIEUTENANT COLONEL MARK D. FEIERSTEIN,
Commander, Buffalo District
U.S. Army Corps of Engineers

MINUTES OF PUBLIC HEARING, held at Holmes Elementary School, Tonawanda, New York, on Thursday, April 22nd, 1999 at 7:00 PM pursuant to notice.

LIEUTENANT COLONEL FEIERSTEIN: Good evening, ladies and gentlemen. My name is Lieutenant Colonel Mark Feierstein. Welcome to the FUSRAP Linde site public meeting.

The purpose of this meeting is to layout to you our proposed plan for the remediation of the Linde site and to obtain your comments. We believe that an important part of project remediation execution is to hear all of your concerns, take all those concerns into account into the final plan so that when we actually go to execution we can execute the best possible plan.

The system we have setup for making the official comments, and we have a Court Reporter here recording them, is if you want to make an official comment on the record you need to have filled out a card. If you want to make an official comment on the record and have not filled out a card, please raise your hand and Mary Grace Quinn of my Public Affairs Office will give you a card.

Is there anyone here who wants to make an

official comment on the record who has not yet filled out a card? Okay, good. What we will do with all of the official comments on record is respond to those in writing. That would be part of the record of this remediation.

You have until the 27th of May to get all of your comments to us. We've extended the comment period by 30 days at the request of Congressman LaFalce and CANiT, so you can either get your comments into us tonight verbally or they need to be postmarked by the 27th of May.

In order for this meeting to proceed efficiently and not get hung up, we ask that you cooperate and allow us to impose this meeting protocol. What's going to happen is first the project manager, Ray Pilon, is going to brief you on the remediation plan and our recommendation.

Then we're going to take a break. Then we're going to have that comment period I talked to you about. Then we're going to take a break. Then there will be an informal question and answer session, but I ask you to speak one

person at a time.

Arlene from my Public Affairs Office is going to call on you in the order in which you submitted your cards and we ask that you limit your comments to five minutes per person to allow everyone a chance to get to speak their portion, speak their mind. That's pretty much the agenda.

As far as informal questions and answers, like I said, we're going to do that last. It doesn't mean we're not going to allow any discussion at all during the presentation. If there are a couple of contentious issues, we may get into a little discussion during those, but I would prefer to keep to the program.

Otherwise, it makes the process less efficient, but we will stay here to answer questions and talk to you and address concerns for as long as you like. There is no time frame as far as we're concerned. We're here for you and, like I said, we believe that we should keep you totally informed of everything we're doing.

There are no hidden agendas. Everything is

open and above board. I'm here for as long as you want us here and if you want us to come back again let me know and we can do that, too. We're here for you.

Before I turn this over to Ray, let me introduce the members of the FUSRAP team that we have here. First, George Brooks. He's the deputy district engineer. He's my deputy for programs and project management.

We have Tim Burnes who is the overall FUSRAP project manager, Buffalo District. We have Tom Hempfling from our division headquarters. He is the FUSRAP point of contact at the division level. We have Ray Pilon who is the Linde project manager.

We have Tom Kenna who is the Linde project engineer. We have Michelle Barczak from our Office of Counsel. We have to bring a lawyer. We have a lot of other -- where is Arlene?

Nancy Stick from public affairs. Mary Grace is back there. We have Frank Stevenson. We have all sorts of folks from the district, but these folks up here are the primary people

involved in the Linde project and I'd rather not take up any more of your time rambling on and turn it over to the project manager, Ray Pilon.

MR. PILON: Thank you. I'm wearing a mike. It sounds like you can hear me okay. A couple of people we missed. We have some consultants here, George Butterworth and Frank Stevenson, from SAIC. They're part of our team so I'd like to acknowledge them and there's some familiar faces in the crowd.

I see the Supervisor from Tonawanda here, Carl Calabrese. Welcome. Two gentlemen from CANiT, the Coalition For Nuclear Waste in Tonawanda, or against nuclear waste. Some gentlemen from Praxair, Dennis Conway and Tom Duggan and Jim Rafferty. Jim is new to the Praxair team.

I've been dealing with Praxair for about a year and a half now. We started in October, '97. What I plan on presenting tonight is a history of the former Linde site. It's now under Praxair ownership. I'm going to describe the studies that we've completed, show you where

we found contamination.

It's confirmed. We know where it is. We want to go clean it up. I'd like to explain the CERCLA requirement. That's the law that gives us the authority to do the cleanup. The alternatives. We've investigated the schedule and then we'll take your comments.

This is a time scale. I mentioned the CERCLA authority. What that authority does is it limits us to do specific things. We're not allowed to go and cleanup everything. It directs us to clean up the MED waste. MED stands for the Manhattan Engineering District.

That was back in the early 1940's they came in and used the former Linde facilities to process uranium. In 1974 FUSRAP, Formerly Utilized Sites Remedial Action Program, that was developed by predecessors in 1974 and six years later the Linde site was designated an official FUSRAP site, so we have been studying that site since 1980 in detail.

In 1997 Congress passed an Appropriation Act and it directed the Corps of Engineers to become

the lead agency for FUSRAP. That was, like I say, in October of 1997. We have been there since.

We've done numerous studies. Our predecessors, the Department of Energy, was here back in 1993. They published a number of studies; remedial investigation, feasibility studies, baseline risk assessments. They came out with a proposed plan.

When they presented that to the public there was some public outcry from the community. As a result of that, there was some commitments made to take any contaminated material outside of New York State. That commitment remains with the Corps of Engineers.

Give us a minute. We have some technical difficulties. I can continue a little bit. I was talking about the studies that the Department of Energy did. I'll continue on as Pete is bringing the slides back up.

I did talk about the 1993 studies done by the Department of Energy. When they came out -- I mentioned the public outcry. Since then

the Corps of Engineers since 1997, we have been taking over the investigations.

We've completed ground water studies of volatile ground water work that was down at Linde. There was a well report published that identified what Linde and the MED activities did as far as ground water goes.

We have done a radiological assessment. We've produced an addendum to the former feasibility study that was produced. We've created a proposed plan. These have all been published in 1997. They've been given to the State of New York.

We're dealing right now with the Department of Environmental Conservation and they've been provided to CANiT and the town. Okay. This last item, the proposed plan, is the reason why we're here and I'd like to say this is really a great day for Tonawanda and the community and for Praxair because we're proposing to remediate the contamination within the federal guidelines.

When we're done the site will be considered clean for federal release with no radiological

restrictions except for the area below Building 14 and I will go into a little more detail on that, but as part of a commitment we're going to take the contaminant material outside of New York State and dispose of it in a licensed disposal facility that's permitted to take it.

If we get this back online we can go back to the slides. I'll continue the presentation. Actually, I need the next slide because it's a map showing where the contamination is on the site.

So you know, we have some historical photographs on posters in the back of the building. There's a description of the proposed plan, what's required as far as excavation of soils. There's a number of buildings that will be demolished. Building 57. There's a number of them. We can explain that as we go.

The exception to our proposed plan or the preferred alternative is to keep Building 14 in place. Building 14 has been remediated and it's safe to work in. Maybe we should take a five minute break or so.

(Recess taken)

MR. PILON: Okay. It looks like we have a backup computer that will get us through this. Before we had the problem I described the investigations that were completed. The reports produced by the Corps of Engineers in March of '99 include the injection well report, the radiological assessment, addendum to the feasibility study and the proposed plan.

We mentioned that we know where the contamination is and those people who are not aware of what the facility looks like, this Praxair facility includes about 105 acres. Some of the main buildings for those who do work there or are familiar with it, Building 30 is right here.

That was demolished this past year. We took it down last fall. Building 31 there is active work going on by Praxair tenants. Building 14 is right there. That's a research and development building that Praxair uses and

there's a Conrail track that runs along the east side.

Sheridan Drive is along the north here and over in here is the Sheridan Park golf course and just where the park facility is. The school we're in is located just to the west here so that will give you a general layout.

Tonawanda has town garages down on Woodward Avenue here. That's basically the layout. The blue areas identified on this map, this right here is the Conrail tracks along the east. Sheridan Drive is up here.

We broke this down. We've blown it up so you can make some sense out of it, but basically the contamination exists in the areas along the parking lot. When you drive in along East Park Drive there's some areas in here.

Building 30 slab is right here. That's been X'd out because the building is gone. There's also Building 38 and 39 that's been demolished. 31 is here. There is contamination along Building 57, so we're going to show you some blowups of this map right here.

As I mentioned, coming into the entrance of Praxair, there's a lawn area and some spots and a parking lot and along the east side here is right along the edge of Building 30 and Building 70. Those are the areas in the northwest quadrant of the property.

The northeast area is where most of the contamination exists. There were five buildings that the Manhattan Engineering District used and Buildings 30, 38, 39, 57 and 31 and also Building 14 that's in the next slide.

There's contamination that spread beyond the fence line into the Niagara Mohawk right-of-way and along Conrail that is included in the proposed plan.

Okay. This is south of Building 30. Right here is Building 14. There is contamination below Building 30. It's inaccessible, or Building 14 I must say. It's inaccessible right now. We've just completed decontamination of that building last September.

The interior of the building has been cleaned up and right now for the proposed plan

one of the alternatives is to tear that building down and excavate the soils, and I'll talk about the alternatives in a minute.

I mentioned to you that the Corps of Engineers is working under a law. That law is commonly termed CERCLA. It stands for the Comprehensive Environmental Response Compensation and Liability Act.

Under that act there's nine criteria that are used to evaluate alternatives. If we go clockwise from -- say this is number one. This is the most important one, the protection of human health and the environment.

Compliance with ARAR's, Applicable and Relevant Appropriate Regulations. Those are the two major ones. These next five are evaluated for long-term effectiveness, short-term impacts, reduction in toxicity, mobility, implementability and cost.

The last two are state and community acceptance. We have to work within the confines of the law. We're not allowed to go beyond that law.

The contamination we found
.. ..al with Manhattan Engineering District is basically thorium, radium and uranium. For us to develop a cleanup standard we went to the ARAR's, which I talked about those are applicable federal and state laws and regulations.

What's been identified as the ARAR that we will cleanup to is 40 Code of Federal Regulations, Part 192. That's the law that we're using to clean up the radium and thorium.

Now, this law is deemed protective by the EPA and that's the federal requirement. The uranium contaminant is not covered by 40 CFR 192, so for us to come up with a proposed plan and remedial action plan we had to develop a guideline on what to cleanup to and what that evaluation entails is a risk based assessment and what we've done is we've identified the cleanup level for uranium to provide the same level of protection as the ARAR based cleanup criteria for thorium and radium, so the protection on both the uranium, thorium and

radium are equal.

This is the goals for us to cleanup to. We measure the contamination in a unit called pico-curies per gram in soils. For us to achieve the cleanup we have to clean up the radium to 5/15, 5 being the first six inches of soil and 15 below that.

The uranium cleanup criteria based on a risk based valuation is 600 pico-curies per gram. We've put a box next to that to show what the dose equivalent is for 600 pico-curies per gram and that's less than ten millirems per year.

To put that in perspective, everyone in this building is exposed to radioactivity. Normal dose levels for the average person is 360 millirems per year in the Buffalo area. If you lived in Denver it's in the 400 and some range.

We've evaluated Department of Energy Guidance, Nuclear Regulatory Commission Guidance, New York State Guidance and the cleanup criteria that we're using right now, the on-site worker at Linde once we're done cleaning up will be exposed to less than 6 millirems per

year in unit eight which is around the Building 30 slab.

This is based on an averaging of the site so that can give you an idea for a comparison of what the millirems per year are. Everybody gets around 360 in this area. The alternatives we considered as part of the CERCLA process, we always consider no action. That's do nothing and just monitor the site.

The cost associated with that for long term monitoring is about $900,000. The alternative number two is the preferred alternative that's in blue and that basically calls for excavation, decontamination and placing institutional controls primarily at Building 14.

As I said, there's contamination below Building 14 that's inaccessible and it poses no risk as long as nobody goes into the subsurface of the building which is highly unlikely until somebody decides to knock that building down. Institutional controls will be in place.

The cost at this point currently for this proposal is $28 million. The other alternative

we considered was the same excavation and decontamination as the previous alternative with the exception of tearing Building 14 down and excavating soils under that building.

The preferred alternative as identified in blue does meet the 40 CFR criteria and it does meet the risk based evaluation of 600 pico-curies per gram in Building 14, so the guidelines that's been established reach the requirements of the federal government.

The schedule right now is we've extended the comment period another month. Comments were originally scheduled to be closed on April 27th. We're going to go to May 27th. We're hoping to get a record of decision signed in July.

Before we sign a record of decision any comments that are received or presented at this meeting or submitted in writing to us must be properly addressed and will be produced in a summary. That will be part of the record of decision and if we can continue on that schedule we should be getting excavation, cleaning up of

the site this summer.

Our ultimate goal is to have this job done at the end of fiscal year 2000 which is the end of September and right now we believe that's achievable.

In conclusion, the Corps of Engineers has evaluated the site. We've looked at previous studies. We've looked at new data. We've developed a proposed plan based on federal and state laws and regulations. The plan is protective to human health and the environment and the community acceptance is what we're here to gain now.

It can be done in a timely manner. We'd like to finish this stuff up and have it over with at the end of next year. Like I say, this is a good day for Tonawanda. We have a plan in place. We're ready to go do the work and I guess we'll turn it over to you to talk and give comments.

I'll turn this over to Colonel Feierstein. He can close out.

LIEUTENANT COLONEL FEIERSTEIN: Would you

like to go straight into the comments or do you want to take a break? We'll go on, okay. First let me recognize Rich Tobe and Carl Calabrese from CANiT. I neglected to do that earlier. They are from the Coalition Against Nuclear Waste in Tonawanda and Congressman LaFalce meets regularly with us and we work very closely.

They to a large extent are the conscious of the community and we work very closely with them to try to move the program forward to make sure that all public concerns are addressed, but in addition to that we do bring things directly to the public and, again, if you filled out a card we're now going to take those -- we're going to take those comments from you in the order in which you turned in your cards.

If you would still like to make a comment and you haven't filled out a card you can still raise your hands and one of my public affairs officers will give you a card and you can fill that out.

After we go through the official comments which are being recorded or which will be

recorded by the Court Reporter, we will take a break and then have an informal question and answer session. Who has the cards? Okay.

MS. KREUSCH: I will be calling you in the order that I received the cards except for the public officials. I'll be calling them first. Mr. Richard Tobe will be speaking for Congressman LaFalce's office and also for CANiT.

MR. TOBE: Good evening and thank you. First, on behalf of Congressman LaFalce who had hoped to be here tonight but could not, he's otherwise engaged, Congressman LaFalce sent a letter to Colonel Feierstein dated April 22nd. They've asked me to read this letter and I'll do that.

Dear Lieutenant Colonel Feierstein, I am in receipt of the Proposed Plan for Remedial Action at the former Linde site. While I have not had enough time to discuss the full range of implications that would result from the implementation of this proposed plan with CANiT's technical consultant, I do have grave

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immediate concerns about the proposed remedial action criteria of 600 pico-curies per gram of uranium-238.

I am deeply disturbed by the prospect of increasing the criteria from the agreed upon 600 pico-curies per gram which is currently being used for remedial activities. As you know, my number one concern throughout this multi-stage FUSRAP program has been the absolute protection of the health and safety of the residents and the environment.

I insist that no action be taken that compromises the public health. I want assurances from the U.S. Army Corps of Engineers that any proposed remedial action plan meet with full consensus of the areas stakeholders. We have labored long and hard to achieve agreement by all parties regarding Tonawanda FUSRAP remediation and any future cleanup activities should follow the same rigorous consensus building.

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The employees of Praxair, the residents of Tonawanda and future generations deserve nothing

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less. Thank you for agreeing to my request for an extension of the public comment period. I look forward to a response to my concerns. Sincerely, John LaFalce, member of Congress.

A copy of this letter has been turned into the Court Reporter and Lieutenant Colonel Feierstein has a copy. There's also several copies available with Paul Krantz from the Department of Planning.

If anyone wants a copy please feel free to ask for it when we're done. I have also on behalf of CANiT sent a letter to the Corps of Engineers to Lieutenant Colonel Feierstein. A copy of that was also turned into the Court Reporter.

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As John LaFalce did, we asked for an adjournment or an extension of the comment period to allow us to better understand and analyze the proposed activities. I'm very pleased that that extension has been granted and thank you for that. Our request came in late and you reacted promptly and we very much appreciate it.

I think it will make for a better opportunity for CANiT to provide comments. The reason we requested the delay was there was only 30 days made available for comments and those fell over recesses for Congress, the county legislature and the state legislature, all participants in this process, and virtually everybody involved was out of town for at least a portion of that period.

Additionally, CANiT's technical consultant, MJW, had had its contract expired and had not yet been renewed. Happily, that's now been renewed and I want to again thank the Corps of Engineers for an extraordinary effort to allow that to happen.

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It will allow us to take the scrutiny that's required, but their contract was only renewed yesterday so we need more time. Finally, we have some pretty serious concerns about the proposed action. We think that they also will take some time to what we are proposing to do.

What CANiT is proposing to do is to have a CANiT meeting which is now scheduled for April

27th at 1:00 PM at the Phillip Sheridan school in Tonawanda. At that session we'll hear from our consultants, discuss this and prepare final comments that we will submit before the May 27th deadline.

I can make some preliminary comments now primarily in the way of expressing concerns rather than final opinions, but we're honing in on these issues and we want to raise them now.

We'll finalize our comments after we've met with our consultants and had a meeting and heard from all the CANiT members which has not yet occurred, so I'll go through the comments fairly quickly.

First, we did hear something about this tonight, but we do request a statement from the Corps regarding the policy for state concurrence and community acceptance. That was a policy that the U.S. Department of Energy had when they were managing this process and I was actually pleased tonight to hear that the CERCLA process provides that same type of involvement for our community.

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That will involve both state acceptance of the proposed plan and a requirement that there be community acceptance. We think CANiT not alone but in large part speaks for the community and we hope and expect that the concerns as we raise them will be given the consideration which they deserve.

We, of course, urge others to speak also. The goal of CANiT itself has been to have a cleanup activity that would allow the implementation of the Tonawanda master plan.

Carl Calabrese I'm sure will speak to that, but we are concerned that the Corps' proposal may not allow for the full implementation of that master plan, but we will require institutional controls on the site.

It's a matter of concern for us and we will be dealing with it in more detail later. We have a very serious concern about the proposed cleanup standard of 600 pico-curies per gram of uranium-238.

I don't want to go into the details of that now other than to say that it is higher than we

expected, significantly higher, and we want to understand what the impacts are both over the long-term and short-term and we want to be sure that the 10 millirem standard for exposure to workers on the site and to the visiting public will not be exceeded.

It's going to take some time to get through all the calculation that's led to the 600 pico-curies standard. We have some very serious reservations about how the Marsom techniques were used, both how the averaging techniques contained in this methodology can leave hot spots on the site which could be a danger, particularly to the average 600 pico-curies instead of 60, and also because of what we have heard about how it may have been applied at Ashland 2.

We want to go through the Marsoms. We're not sure we're comfortable with what has occurred. This is a technique to determine if the site has been properly cleaned up through a sampling and statistical averaging.

Highly technical. I don't fully understand

it. I have an idea, but our consultants will help us get through it. We're concerned how it's applied at Ashland and want to be sure it doesn't happen at Linde.

We also have been informed of the requirement to obtain a license to possess radioactive waste at the site after this cleanup occurs. We're not sure that's the case, but we're concerned about it and want to ask about it and look into it. We don't think we want a licensed disposal area here in Tonawanda after the cleanup occurs.

We're very concerned about it. We believe and concur with New York State that there's a need for an independent verification contractor associated with this cleanup effort. This is the normal standard practice when civilian activities are undertaken to cleanup waste.

We hope that the Army Corps of Engineers can come to accept this. I know it's different from what they normally do. Finally, we want to review the cleanup effort at Ashland 2 to learn from what's occurred. We've heard perhaps that

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one radionuclide may not have been removed from the site because it was not specifically mentioned in the record of decision or because it was not present in conjunction with a cleanup criteria.

We hope this is not true and we hope certainly it's not a final action, but we are concerned with what we've heard. We don't want to see a too ritualistic or rigorous or mechanical processed applied to the cleanup at Ashland 2 and we certainly don't want it applied here at Linde, so we want to look into these things.

We hope to hear from the Corps and also from our consultant. In conclusion, those are areas of concern. Final comments will be made after the CANiT meeting. I want to again thank the Corps for the extension of time. Thank you for holding this session and thank them for making our consultant available again and I'm sure there will be a way we can work this out together.

MS. KREUSCH: Carl Calabrese, Supervisor,

Town of Tonawanda.

SUPERVISOR CALABRESE: Ladies and gentlemen, any of you who have followed this issue of nuclear waste in Tonawanda going back many years have seen me at these meetings and you know that the prior government agency, federal government agency that handled this, the Department of Energy, succeeded in doing something that you normally don't see from me and that is massive losses of temper at some of these meetings.

I have attended these meetings with the Department of Energy and found myself shouting and pointing my finger. They really did make me angry. They're gone now and I have to say that I'm not so sure if this is a good day for the Town of Tonawanda because of some concerns that have been raised the last couple of days.

I am not ready to lose my temper yet. We've had a good working relationship with the Corps. We have actually moved dirt out of this town, some 45,000 cubic yards of it last year. I was optimistic that we will continue that program, but I do have some very serious areas of concern

and reservation from information that has come to my attention and the attention of CANiT just in the last number of days.

This is a special site, the Praxair site, because it's home to hundreds of workers each day eight to ten hours, sometimes longer. It borders this school and this neighborhood and any solution, any cleanup plan that has radioactivity that approaches any type of dangerous doses to our residents and our workers is unacceptable to me.

We are going to be very careful along with our technical consultants to make sure that line is not crossed. Secondly, as Mr. Tobe mentioned, any cleanup plan that requires the Praxair plant to receive a radioactive license for what's left behind is absolutely unacceptable.

We will essentially be agreeing to a low level nuclear waste site in this town and that was unacceptable going back to 1988, '89 when the Department of Energy first proposed such a plan. The Ashland 2 site along River Road, the

agreement we had with the federal government clearly said that a final cleanup plan would leave us, a community of the Town of Tonawanda, with land along the river that could be developed.

Now, if any material has been left behind at the Ashland 2 plant that exceeds standards, and what I'm hearing now, and again I want to give the Corps the benefit of the doubt and have a face to face meeting with them and prove these concerns unfounded, but if it's true that material has been left behind and the solution is to fence that off, we will not have a piece of land that can be developed and therefore we will have a breaking of the agreement that we thought existed and that will be unacceptable and just I want this on the record.

The Corps was planning to have a final cleanup ceremony at the Ashland 2 site sometime in May showing the clean dirt coming in and filling in and symbolic of the fact that the land has been cleaned up.

If there's any doubt in my mind that that

land cannot be developed because of material left behind, I and the town board will not participate in any type of ceremony of that sort. That will be nothing but a sham and I will have no part of it, so I want to hold my anger and give the Corps a chance to answer our concerns face to face because they've been very good about that up to this point, but I guarantee you if those concerns are not answered I will be back and I may lose my temper. Thank you.

LIEUTENANT COLONEL FEIERSTEIN: As I said, we're going to address all of those concerns and we're going to do so in writing and make it part of the public record and I believe we can satisfactorily meet all of your concerns on that.

MS. KREUSCH: We also have a portable mike tonight, so if anyone would like to just have someone come to you with the mike, just stand when I call your name and Terra will bring the mike to you. If you're representing an organization tonight also I would like you to

identify the organization that you're representing. Next we have Mr. Ralph Krieger.

MR. KRIEGER: I think everybody can hear me. I don't think I need a mike. I was a former president of the OCAW 215 Praxair. We're no longer there. The union is gone off that property. However, I'm still president of F.A.C.T.S.

We and CANiT had a long -- two peas in a pod, you might say. But, there is one thing we're in agreement on. There is no acceptance of leaving any nuclear waste in this community that has the potential down the road to life in this area to our children and I have said this before.

That is important. The future are these children. When they grow up are they going to dig up something that was left there some fifty odd years ago? I don't think that's fair to them. I think it's our obligation to make sure that it's cleaned up to the standard it was supposed to be.

If it's not, there's another problem. Who

is going to be responsible? The Corps of Engineers is not responsible. He is not responsible. Of course, not responsible. All they are responsible for is cleaning up.

They are not responsible for the material. That is the Atomic Energy Commission and the NRC. That lawsuit is as good as the day it was written by F.A.C.T.S. That is before Judge Elfvin now. Judge Elfvin let that go that we could -- they could cleanup, but at the end of the cleanup if it isn't cleaned up to what it's supposed to be cleaned up to, F.A.C.T.S.' lawsuit will be generated.

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The community is going to be protected because we are not going to back off on that lawsuit. I can tell everyone right here, the God's honest truth, it's not going to happen.

This community has lived with this radioactive contamination for over fifty years. Everybody knows the cancer rates in this area. I know better than anybody else. I have had hundreds of workers die of cancer. I had one just recently die of cancer. I have got another

one that had half his lung removed and another one trying to get his tumor reduced so they can do something with it.

Three men. That's not going to happen in this community. It happened to the workers. We lost that suit in compensation because we couldn't prove it because the government came in and said it doesn't happen.

Well, that's not over yet either, but this community can understand that F.A.C.T.S. is not going to back off the position that we've taken all along that this has to be cleaned up, that no nuclear signs are hanging on any fences anywhere in this community and that's including the Lake Ontario ordinance works where a lot of that effluent went from the Linde site.

I think that's fair to the community and I don't think this community has to put up with that situation, especially in light of the job losses that we have in this area, the brown fields that we have in this area.

Bethlehem Steel. Now they're going to tear down the airport. There was over 15,000 -- does

anybody understand? There was 15,000 people worked at Westinghouse. Those jobs ain't there any more. There was 20,000 worked at Bethlehem. Those jobs ain't there any more.

There was 2500 people working at Republic Steel. Those jobs aren't there any more. Good paying jobs. I'm not talking about $8.50 an hour jobs. I'm talking about a living wage.

You can't get people coming into this community if you're hanging up a sign saying we've got nuclear waste dumps. We can't and we won't live with it. Thank you.

LIEUTENANT COLONEL FEIERSTEIN: Put up the slide that shows the comparison exposure that was left on-site in the proposed plan versus background. I don't want to mislead anyone here and I want to be perfectly blunt and give you the un-sugar-coated, unvarnished truth.

There is no way that all of the radioactive material will be removed from this site. I'll tell you why. Just our portion of FUSRAP alone, the Buffalo district has eight sites. We have six in Western New York and we have two in

Ohio.

We estimate that our program is going to take until the year 2009 or 2010 to cleanup those eight sites. We are obligated as a government entity to follow the law. The law is CERCLA and CERCLA defines what the cleanup standards are.

Can you put up the slide that shows the comparison of the millirems? Okay. Now, again I'm not trying to be inflammatory. I just want to tell you the hard realities of it.

One of the reasons why we're out here is to educate you. This is going to be the amount of millirems per year that the average on-site worker at Linde would receive after the cleanup that we are proposing is completed.

I'm not saying that's the cleanup we're going to do. We're here to get your comments on that, but if we execute that recommended option that's how much additional millirems per year the average worker is going to get.

Again, we're obligated to follow the law. That's CERCLA. That defines how far down we go

in removing the thorium and the radium and we've derived similar standards from those for the uranium. If we cleaned up everything to background level at this site then we may not be able to do anything at any of our other sites.

I don't know what that would cost off the top of my head, but either one or two of our FUSRAP sites we can clean down to the background level and then we would have no money to do anything else.

Now, this is less than -- everyone in every community would like to have every bit of that removed. Again, we're obligated to follow the law, so should we bring it down to what the law says is an acceptable level or should we only do one or two FUSRAP sites and leave everything else in place?

Again, putting this in perspective, six millirems per year, the average American already gets 360, so in percentage terms we're talking about an additional less than two percent a year.

AUDIENCE MEMBER: Increase?

LIEUTENANT COLONEL FEIERSTEIN: Increase, yes. Now, with the FUSRAP program for my district I said there's eight sites. That's about $500 million for those eight sites.

Now, if we can get $5 billion or $10 billion or $20 billion, I don't know what it would take, then maybe we could cleanup everything from every site, but we have that to work with and we have the law to follow.

Again, not to be inflammatory. I want to tell you what our perspective is on this. Next comment?

MS. KREUSCH: Thank you. Christine Hausrath?

LIEUTENANT COLONEL FEIERSTEIN: Just to put it in further perspective, I guess it depends on the type of x-ray, but certain x-rays that you get could be 10 millirems so, in other words, you could get an x-ray, probably a chest x-ray, maybe is 10 millirems.

You could get a chest x-ray and it would give you more radiological exposure, a higher dosage, than a worker on-site eight hours a day,

five days a week, fifty weeks a year. That's what that is based on.

MS. HAUSRATH: Hi. I'm Chris Hausrath from Hausrath Landscaping. I currently reside in Amherst, but I grew up in the Town of Tonawanda. I went to school right here at Holmes. Ours was the first plant here.

I can remember a lot of neat things here, but what I'll always remember the most is daydreaming, watching the fellows cut the grass and groom the grounds.

I was truly impressed and now with a 27 year old business that my family and I own, I am proud to say I am the groundsmaster at Praxair as well as the groundsmaster at many other large complexes and companies in not only the Town of Tonawanda area, but throughout Western New York.

My job is not only to work on the grounds, it's to work with the grounds, whether it be soil, plants, flowers or lawn mowing. I have always kept in mind that Mother Nature is only loaning us her ground and that they really

belong to her and that we should keep them safe, healthy and beautiful for everyone to enjoy.

I have worked on Praxair's grounds for over seventeen years grooming, planting, manicuring and beautifying and while working closely with Praxair personnel on many projects, I have noticed and admired how sensitive they are to the community as well as how very safety conscious they are, and trust me when I say they made darn sure this carries over to their contractors.

I feel the Town of Tonawanda and its residents are very fortunate to have Praxair as not only a workplace in their community, but a caring neighbor in a wonderful town.

I appreciate you're listening to me this evening and again I look forward to our town being a first rate suburb, a great place to live, work and play and even though I don't reside here any longer in residency, my roots and heart still belong here. Thank you.

MS. KREUSCH: Keith Braun?

MR. BRAUN: Ms. Hausrath, with all due

respect, are you a spokesman for Praxair or speaking on behalf of yourself? With all due respect.

I'm not here speaking on behalf of any group or organization. I'm here as one who grew up a stone's throw away from this mess. Wonderful plan. Great day for Tonawanda. You have to understand the people who will now say that Ashland and Linde sites will now be clean, but the truth is this: It will never be gone.

Is a contamination really just limited to the areas shown on the maps? I don't think so. It's deep in the ground, leeched into Two Mile Creek, to the Niagara River and who knows where else.

Why am I here? I grew up here on Desmond and went to school here as a child. My mother died a slow, agonizing cancer death just two years ago and my father soon after that. It was then that I began thinking of all the families who have suffered death and disease on just one block in this area.

Bobby Scalise, Warren Herr, Robert and Ruth

Braun, Cindy Delgato, the Herman family, to name just a very, very few. Are these incidents coincidence or clustered? I'm not a scientist or a cluster investigator, but I'll let my common sense be my guide.

Let me throw this in the works: What about the incidents of leukemia cancers, breast cancers in these neighbors? What about the contaminated creek? What about the sludge dredged from that creek and dumped on East Park near St. Timothy's Church?

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Why were those seven holes of the golf course with the creek sold and the creek plowed over and topped with a road? What about the thousands of children that went to school here including myself since the 1960's? What about the countless numbers of people who have been in or near that creek golfing or as children for golf balls?

What about the health and well-being of former and present Linde workers? What about all the sick, suffering and dead families? What about our children?

MS. KREUSCH: Thank you. Mr. Dennis Conroy?

MR. CONROY: I'm Dennis Conroy. I'm the site manager of Praxair Technology Center. We at Praxair feel that we have been good corporate citizens for the past three and a half years, fully cooperating first with the United States Department of Energy and up to a year or for the last year and a half with the U.S. Army Corps of Engineers.

For both of these organizations we've dismantled critical research and development operations and impeded business operations to give full and unrestricted access to the potential areas of nuclear contamination.

Up to now we have been generally pleased with the progress which has been made. At this time, however, Praxair takes extreme exception to what we feel is the unilateral establishment of a 600 pico-curie per gram cleanup criteria for uranium at our site.

We don't understand why the 600 pico-curie level has been set so high when our experience for the last three and a half years has been set

at 60 pico-curie and we have been led to understand that the criteria for Colonie, New York near Albany has been set at 65 pico-curie.

Now, Colonel, I'm an old soldier myself and I'm not real pleased about the thought of taking the same hill twice. It's happened before at the site. In 1954 we were certified clean by then the Atomic Energy Commission.

Twenty years later it was decided the standards have changed and the Department of Energy said that we had a problem at the site. We don't want it to happen again.

I feel, Praxair feels, we run exactly the same risk in accepting a 600 pico-curie standard at this time. No margin of safety, no flexibility in our operations and a probable imposition of radiological licensing at our site.

All we ask is we do the job once and we do it right. Thank you.

LIEUTENANT COLONEL FEIERSTEIN: I want to address something here and I'll go public saying this and we'll address it formally in writing.

It's incorrect that the standard is 60 pico-curies per gram out in Colonie.

MR. CONROY: We were led to understand 35 pico-curie.

LIEUTENANT COLONEL FEIERSTEIN: That is being done by the New York District which is part of the Corps of Engineers and there is no standard for that right now. There were several standards that were set by Department of Energy, but the Corps has not come up with what it's going to recommend in the proposed plan for that.

All those are old Department of Energy standards and those have to be re-evaluated by the New York District and then a standard will be formed, but there is no standard that has been determined yet for Colonie, so it's not correct and what was the DOE standard for that?

I think it was 35 pico-curies to 100 pico-curies would be capped and above 100 would be removed but, again, that was the Department of Energy.

I can authoritatively state that and we will

confirm that in writing. We checked that out before we came here. I will also say that in the Corps of Engineers we do not go about cleaning up to different standards on different sites.

Yes, the radionuclides are different and the site conditions are different, but to the maximum extent possible, we clean the sites to the same standards. We have an organization called the CX, the Center Of Expertise, and one of its primary functions is to ensure that the cleanup standards are as similar as possible given the varying contaminants and given the varying site conditions.

So, you will not find -- you should not find a case where there is a large variance in cleanup standards. Again, let me remind you what we're doing is following the law here and we can go into the 600 pico-curies in more detail if you want.

I'm happy to discuss that with you in the question and answer session. I'd like to let the people get their comments on the record, but

again, I will admit and I'll say this here. It does sound high. 600 pico-curies per gram does sound high and that is higher than the number of pico-curies that we have here for the radium and the thorium and when I first heard that number I said what is going on here?

Then what I did was I got with my engineers and I had them walk me through exactly where that came from and why that is the case and just suffice it to say, and we can go into more detail in the question and answer session, suffice it to say right now that it's not something that directly correlates.

You can't just say 5 pico-curies of this versus 600 of that. What is important is the dosage, the millirems, the dosage that you -- that the human body will absorb from that radioactivity which is measured in pico-curies.

That's the bottom line because your risk of cancer is a direct function of the dosage. That's why we're going off of -- that's why we have the 10 millirem there, but again, I don't want to take up people's time for comments.

We can talk more during the question and answer session about that.

MS. KREUSCH: Okay. Ruby Bass-Earley?

MS. EARLEY: I thank you for this little bit of time. My husband was at Union Carbide. He and his men were moving out these rusty cans that were leaking, burying them outside.

Within two weeks after they did this they began to die. My husband died instantly in his car driving to work. There were not too many signs to be seen because this kind of material is like an x-ray. It penetrates through. It takes care of your body quickly.

I attended several meetings like this where men who worked with him were dying. They're all gone. I doubt if many of them are here tonight and I'm sorry because their families have suffered greatly. 22 years ago, 1977, my husband died in the car going to work. He died instantly following this contamination.

Many others died like him. You probably haven't heard of this. It's very unfortunate that you haven't. It's a very sad situation. I

was left with four young boys to finish sending through college and raise. They missed their father. They had a right to have him, but because Union Carbide was so negligent this happened.

Now, I know this happened because the night before his funeral five officials from his office at Union Carbide who were friends of his, I doubt if they're there today, I haven't looked to see, but this has been a sad situation for us and I hope all of you who are concerned with it including the gentlemen who are here tonight giving us the right to have this hearing, it won't help us, but many of us will have a sad memory of Union Carbide and I am a teacher who has had many years of science and to the best of my ability and the research I have done and the people I have spoken to tell me that that plant should be locked up, forgotten and never gone back.

You can bury that into the ground if you want to and try to get rid of it. You'll never get rid of it. It will be there a thousand

years. Do whatever you want to with it, but it's a remembrance of what happened here. Thank you.

MS. KREUSCH: Thank you. Mr. Don Finch?

MR. FINCH: Hi. I am treasurer of the F.A.C.T.S. group, retired from Praxair early '94. Been working on researching to find out just what we're talking about here tonight.

I can't go too deeply into it right now, but anyway I'm really pleased to see a pretty good turnout of civilians, my former fellow workers. It's been a long tough battle trying to awaken the public to the fact that you don't go out and spend millions of dollars on a non problem which we were told in the beginning by the DOE there's no problem.

The database at home on the computer has over 200 names, Praxair workers. Most of them are dead. There are some that are just now getting their cancers. Latency period on cancer of this type or not cancer of this type, but due to low level radiation is 20 to 30 years.

Guess what? We finally hit the blossoming

time and there are cancers among the ex-workers over there are starting to blossom. I thank this young gentlemen back here and this lady right here for what they had to say.

I'm sorry to get emotional, but this means a hell of a lot to me. Should mean a hell of a lot to your people's future generations. Another quick thing. I'd like to thank Mr. Tobe and Mr. Calabrese for their remarks. We're now I feel all starting to come together locally.

What about the future? We can't be playing around with this stuff. We can't be listening to the no problem scenario. Ralph and I once said we can't be too involved. We're too busy going to the cemetery digging graves for people to be buried. Thank you.

MS. KREUSCH: Mr. Thomas Schafer?

MR. SCHAFER: Hi, everybody. I'm Tom Schafer. I'm also an ex-worker of Linde Air/Union Carbide. I started there when I was 18 years old right out of Kenmore West.

I have lived here all my life. My father worked at Linde Air. My grandfather worked at

Linde Air. I've been doing some research on what radioactivity does when it's genetically passed.

Usually doesn't hit the first generation. My older brother died of a thyroid condition which I believe was passed from my grandfather through my father and then when my mother and father had my brother this defect was passed to him from working on this site and this condition killed him three years ago.

Could I have the laser pointer and the picture of the facility put up, please? Building 31 here was our maintenance shop. It used to be here in the 70's, but they moved us back here. My father's office was in this building and since then they have cut blocks out of the walls of his office.

He sat on a hot spot and he died of a hardened heart where the autopsy showed his heart had pin holes in the back that blew out and he died very painful and I believe it was due to this what everybody has been talking about, x-ray exposure.

He spent many hours working in that building. The old timers I work with, there's tunnels that come from here down here, here to the power house, up into the front office buildings, too. I worked in the new tunnels, every building on that property.

What I never hear talked about is the old tunnels that are buried next to the new tunnels. When we talk about we're going to get the truth out here, well, why don't we do that? Underneath this building when I worked on second shift with the Geiger counter in 1980 -- I had a civil defense Geiger counter and right here in this building -- I'm shaking a little because I get nervous, but right here there was a foreman's office that was shipping and receiving inspection.

Most of the foreman that worked in that office died of lower intestinal cancer. In this building I found what was a plug ventilation shaft, Building 31. They capped the floor and when we moved back there there was an entranceway to go under the ground. There was

an underground laboratory right in this area and it's never talked about.

You can never find this facility up on the website. It's a classified thing and I don't think it's ever been de-classified because what they did underground I understand was very top secret for the war, which I'm proud we won that war and I'm proud to be an American citizen.

My older brother had passed away. He served in the United States Air Force. I'm proud of that, so when we talk about the truth, I want to get a little deeper into that. In 1981 this was after the Right to Know Act was into effect.

This was due because of Love Canal. They posted that on all our boards in the factory that we had the right to know what we were working on.

At second shift they had a safety meeting. I asked this gentlemen here, Mr. Duggan, if he had a level map of the radiation on the property and I was told at that time everything was within background radiation, so I was lied to.

It's very hard for me to come to these

meetings and listen to some of this stuff when I've been lied to. How would you feel if you've been lied to? I have ingested radioactivity and I sat up in the Niagara Falls meeting in Lewiston we went to.

My best friend is dying of cancer that I work with here. He's got a three and a half inch tumor in his lung and he was told to scrub down this building that's no longer here, the ventilator ducts that were on the roof.

What do you think was on there? I know what was on there. You don't have to tell me. When you ingest radiation it lays in your body and it never comes out. It's like asbestos.

I don't know. There were times where I read newspaper articles where I felt that the politicians were against us and I'm glad to hear Mr. Calabrese say what he said tonight. We shouldn't be fighting each other. We should all be working together.

As far as the money, maybe we should cancel some of them shuttle missions. Thank you.

MR. PILON: I'd like to briefly address a

couple of issues. As part of our proposed plan I mentioned that we're excavating soils that we know that are contaminated.

We're also taking care of the tunnels that he's talking about. We are aware there were tunnels between the buildings, that there's utility tunnels and there's a tunnel that was used for delivery of ores into Building 30.

That's being addressed. There's also what we believe is a vault which is a submerged vault outside of Building 57.

That's being addressed, so our proposed plan is to take care of soils and subsurface anomalies and basically that's it. We had a gentlemen come in, Chuck Swanick, who just arrived and he raised his hand. I think he wants to say something, so we'll give him the floor next. Thank you.

MR. SWANICK: First, it's always a pleasure to discuss this issue with the Army Corps of Engineers and I apologize for being late. This has been a bad week and it just continues to go on and on and on, but the good news is I still

have my fingers which I'm very grateful for.

I want to take a few minutes to talk to the Army Corps of Engineers about what I see to be a major problem and it's a concern that I want to insure we don't rush back to the old days. For many of us at CANiT, and I'm a member of CANiT, we had a deal with the Department of Energy for about ten years and it was a very difficult, controversial time for all of us.

It was one confrontation after the next, after the next, after the next and to be very frank with you, when the Army Corps of Engineers received this assignment many of us were somewhat skeptical, but we felt new faces, new ideas and a willingness to work together.

So, for the first ten years it was more about how to clean this up and to what level to clean it up than it was about getting anything done and I think what we all are pleased to say that at least the material is starting to move out of the Town of Tonawanda and it's been I think a positive relationship for most of us as far as getting some action, spending some money

and getting some material moved to a safer facility.

It is very troublesome to me because there is a definite difference of opinion and CANiT has worked, I thought, very closely with the Army Corps of Engineers in attempting to overcome some of those differences that we had with the Department of Energy and to try to work together with the neighborhood to get this done as quickly as possible within budget and, most importantly, meeting various health guidelines that we had agreed to about a year and a half ago.

Now, I do know there was some difference of opinion about the health guideline, but we finally settled on a guideline and we moved forward. My comments are really directed to the Army Corps because we are now to a point where we're at a next big phase of this program and that is to deal with Praxair, get that cleaned up the way it should be cleaned up and we have a couple more spots that need to be cleaned up and I think up to this point we've all worked

together, but there could be a separating of the ways here because CANiT, all the elected officials and the residents as well are looking very closely at this new document and I am very concerned about some of the levels that are being used as a guideline for cleanup.

Now, most of you I think have been with this for about eleven or twelve years as I have and there was a tremendous fight with the Department of Energy about the degree of cleanup. I remember there was some that had a very, very high level of cleanup. There was some that met a middle ground by saying we would clean it up for commercial property as it's zoned in Tonawanda and there was the Department of Energy that told us it was a peanut butter sandwich and it was edible and not to worry about it.

I think the degree of cleanup is crucial and I think we need to work very closely together and not get into a confrontation, not to get into a head-on collision because we've come so far and ultimately the goal for all of us is to get it cleaned up.

Now, this issue of the level of the cleanup is very, very important and CANiT as well as the community and F.A.C.T.S. are looking very closely at your degree, your level of cleanup, and I will say that we don't agree with that level.

We do not agree with that level, so CANiT now is going to take some time as well as some of the other groups and we have a consultant and we're going to get more deeply involved again in this issue as we look at what you're proposing to do and what we believe based on scientific research and documentation going back twelve years as to what is a safe level of cleanup and I want to assure the Army Corps of Engineers that we have no intention of accepting anything less than an acceptable level of a cleanup.

When DOE offered us millions of dollars to do a cleanup based on their point of view we rejected it. When DOE offered us all sorts of opportunities if we would join them in leading the material here we rejected it. When DOE tried to create a citizens committee that would

be directed by the Department of Energy to keep the material here we rejected it.

When we all pulled together the message was DOE can't do this cleanup because we don't trust them any more and so DOE was taken away and the Army Corps of Engineers was brought here and up to this moment I think all of us would say it's moved well and you've done a good job, but let's not separate our ways.

I want to again make it very, very clear that we are not ready today, tomorrow or next week to adjust what we consider to be a safe level of cleanup, and a safe level of cleanup is based on documentation, research and scientific study.

We have a difference of opinion and we need to stop and solve this before we go to the next step and all of us know what this next step is. It is the newspaper confrontations. It is the public comment. It is the rally of the people and it is the cry of the elected officials to come together.

We need to slow this right down. Let's get

this solved with Praxair. You folks have waited a long time to get it done right and we've waited a long time to get it done right. Then we'll move on to the final cleanup phase, but if we don't get some reasonable conclusions from the Corps then I'm fearful we'll take a step back and that's what I don't want to do.

So, my message tonight to you, sir, and I have to be careful because I'm in the Army Reserve so I respect that uniform and you certainly outrank me significantly, so you notice I didn't wear my Army uniform because I'd probably be on my knee right now, but I just want you to know, sir, that we can do this two ways.

We can do it together and we can do it in a reasonable fashion or we can get into a confrontation and then everything comes to a standstill and then everything slows down and then we don't get anything done for another couple of years.

I think all of us want it done right the first time and we want it out of here once and

for all. Thank you very much.

MS. KREUSCH: Thank you. Next speaker will be Marlyn Morford.

MS. MORFORD: Hi. I'm Marlyn Morford and I've been a resident here for 28 years. I don't like to be a doomsdayer, but I agree with Mr. Swanick. If it's got to be done do it the right way.

I have lung cancer which I found out by accident just by taking an x-ray. My kids played here and a lot of neighborhood kids which we all know have died and elderly residents, too. I think if it's going to be done it better be done right.

Otherwise, it will no longer be a riverview community. It will either be passed on to the children or else it will be nothing. What I am worried about is the airborne contaminants that will be coming in the air when they do remove the uranium and the radiation material.

I have no reason to have lung cancer, but I do. I am a nonsmoker and I have no reason for it and that is probably the only reason why,

from living in this area, walking the streets and picking up through the school yard and what else. Thank you.

MS. KREUSCH: Gary Bauer?

MR. BAUER: I have no comments at this time.

MS. KREUSCH: Okay. Is there anyone that did not sign up tonight to speak that has changed their mind and would like to comment?

LIEUTENANT COLONEL FEIERSTEIN: I just want to say one quick comment before we go to the break and the informal question and answer session.

I agree whole-heartedly with what Chuck Swanick has said. I agree with what pretty much all of you have said, but I would like to make a couple of points to clarify a few things.

I know that this is a very difficult issue. I know that there is a lot of history to it that I can't even begin to understand not having lived here. I know it's very emotional. I know that it is very negative and it carries a whole lot of negative connotations.

I don't think there's anything good that can be said about it. I would like to have you think of us as not being -- not having caused it. Don't link us with having caused it. We're here to try to fix it.

I'm an Army officer as Chuck Swanick said, the Army Corps of Engineers, the U.S. Army Corps of Engineers, my boss is a general. His boss is a three star general. I'm a military officer and I'm not going to come to you and lie to you.

I'm not going to deceive you and I'm not going to play political games. I'm going to tell you the truth and I'm not going to mince words and I am very serious about coming to you to give you more information on this any time you want to.

There are no secrets. There is nothing hidden under the table. There's no classified information that we're keeping from you. I will even invite you -- if you want to you can come in a group. You can visit us in the Buffalo District and I think that Chuck Swanick said we have done a good job up until now and I'll

take exception to that.

I'll say we have not because we have not communicated adequately with you because there are a lot of misconceptions about this proposed plan and even about our Ashland 2 site, for example, and we'll respond to this formally in writing.

We're not going to leave any contamination behind on Ashland 2 and we're going to remediate it and move everything to the standards that we originally agreed to and we're not going to do that and I will accept the responsibility for communicating poorly with you and, like I said, there's a lot of misconceptions.

This is going to be totally above board and open and I'd like to take a couple minutes break and then we will informally answer questions and, as I said, take me up on the offer.

We will come out to your community and go through this with you at any time and you're welcome to visit us in the district and we'll go over any of this with you at any time.

I'm not -- what is the best way to put this?

It is extremely important for me to do the right thing and I'll just tell you that's why I joined the Army because to me the Army is an organization where to the maximum extent possible you do the right thing and that's why I stayed in it and, again, if you trust your military -- that's why Congress gave this mission to the Corps of Engineers.

It's the U.S. Army Corps of Engineers. It is a U.S. Army major subordinate command and we have a lot of dedicated civilian public servants, but it is always commanded by military officers, so basically in effect you have the U.S. Army behind this and I will not -- I will act accordingly and handle this mission to bring credit upon the Army as I always have in the past, so please do not think of me -- I know you say you're the government.

Okay. Can I make a little joke here? I probably shouldn't say this on record, but I will. To say that I'm the government and why should we believe you when someone else said this, that's kind of like -- everyone just

finished their taxes.

It's kind of like blaming me for the IRS and the tax system. Please don't blend it all together. We're the U.S. Army Corps of Engineers.

We're here to clean this up and we will work very closely with you and I think that we have reasonable standards here and those are backed up by science and a woman up here made a comment about being concerned about contaminants in the air when we begin the remediation process.

What we'll do, if it's okay with you, is bring the press through here and show the kinds of controls that we have for things like that. We have very, very serious perimeter controls.

It's almost like a military perimeter where we have specified standards for wetting down the material and we have rigid parameters of detection equipment to keep the airborne contaminants down, so again, everything is open and on the table and I

look forward to working with you to clean this up to a reasonable, a safe and a healthy standard.

With that said, I'd like to take about a five minute break and then we will go into an informal question and answer session.

(Whereupon, the hearing concluded)

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S P E A K E R S

ATTACHMENT 2

PUBLIC HEARING COMMENTS
June 3, 1999

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PROPOSED PLAN FOR THE Linde Site,
TONAWANDA, NEW YORK YORK

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Public Hearing held June 7, 1999 at 7:00 P.M., at the HOLMES ELEMENTARY SCHOOL, Dupont Avenue, Town of Tonawanda, New York, for the Army Corps of Engineers.

Present:

LIEUTENANT COLONEL MARK D. FEIERSTEIN,
RAY PILON, PROJECT MANAGER,
ARLENE KREUSCH,
TIMOTHY BYRNES,
THOMAS KENNA, PROJECT ENGINEER,
MICHELLE BARCZAK, COUNSEL,
CHRISTOPHER HALLAM, HEALTH PHYSICIST,
FRANK STEVENSON,
DAVE CONBOY,
JOHN LANDAHL,
CHERILYNN M. PARENT, STENOGRAPHER.

ALSO PRESENT:

Richard Tobe,
Charles Swanek,
Carl Calabrese,
Donald Finch,
Ralph Krieger,
James Rauch,
Alan Bruce,
Lee Lambert,
Kim Hanobeck,
Sherry Dooley,
Frank Lee.

LIEUTENANT COLONEL MARK FEIERSTEIN: Good evening, ladies and gentlemen. My name is Lieutenant Colonel Mark Feierstein, and I'm the Commander of the Buffalo Engineer District, U.S. Army Corps of Engineers. Welcome to the Linde public meeting, the second public meeting for the Linde FUSRAP Site. We have a small group here, and because of that, tonight what we'd like to do is ask something a little different. I was going to introduce about half of the people in the room anyway. What I'd like to do is give anyone the chance to introduce themselves here, just so we can all know who we're dealing with. If you don't want to, we'll just pass you by, but I encourage you to speak up and let us know who you are. I think that would give this a tighter feeling, if we all know who we are.

MR. BALLON: Frank Ballon, intern at the Corps of Engineers.

LIEUTENANT COLONEL MARK FEIERSTEIN: Okay. Take it row by row.

MR. HALLAM: Chris Hallam. I'm the health physicist with the Buffalo District.

MR. KENNA: Tom Kenna.

MR. LANDAHL: John Landahl, Chief of Engineer and Planning at Buffalo District.

MR. PILON: Ray Pilon. I'm the project manager for the Linde Site.

MS. BARCZAK: Michelle Barczak, Counsel at the Buffalo District.

MR. STEVENSON: Frank Stevenson with SAIC, contractor for the Corps.

MR. CONBOY: Dave Conboy, Environmental Engineer with the Corps of Engineers.

MR. BYRNES: Tom Byrnes.

MS. LAMBERT: Lee Lambert, from the League of Women Voters.

MR. MITCHELL: John Mitchell with New York State Department of Environmental Conservation.

MR. TOBE: Richard Tobe here for environment and planning.

MR. GRIMES: Paul Grimes, Erie County Department of Environmental Planning.

MS. DOOLEY: Sherry Dooley. My son attends the school.

MR. RUSSELL: Mike Russell.

MR. DOOLEY: Dave Dooley.

MR. BRUCE: Alan Bruce, resident of the town for 42 years and retired after 44 years teaching radiation science at the University of Buffalo. A friend. Town resident for 30 years.

MR. FINCH: Don Finch, Treasurer of the F.A.C.T.S, Incorporated Group.

MR. COWAN: Bill Cowan, Tonawanda resident.

MR. RYDER: David Ryder, Town of Tonawanda Councilman.

MS. MOREFORD: Marlyn Moreford, just a resident.

MR. KRIEGER: Ralph Krieger, President of Local 8.

MR. RAUCH: James Rauch.

MR. AUGUSTINE: Jim Augustine, Prax Air employee and resident of Building 14 since the mid '90's.

MR. HIRSCH: Paul Hirsch, resident of Tonawanda.

MR. KUBRA: Ron Kubra, employee of the Tonawanda News.

MS. KIRK: Susan Kirk, town resident.

MS. VOGEL: Sherry Vogel, Buffalo News.

MS. KREUSCH: Arlene Kreusch, public affairs for crews represent, the Corps.

MS. CRAWFORD: Martha Crawford, 30 plus years town resident.

MR. RODENMOCKER: Kenneth Rodenmocker neighborhood resident.

MR. PASSPORT: Joe Passport, retired.

TOM DOUGALL: Tom Dougall, Prax Air.

MR. RAPHERTY: Jim Rapherty.

LIEUTENANT COLONEL MARK FEIERSTEIN: Welcome. What we want to do here is clarify The Corps' plan that we discussed the last meeting. It addresses some of the concerns that you brought up from the last meeting, provides you with an additional opportunity to comment, and again, what we're trying to do here is get input and make sure that the plan that we execute is the best plan. Next slide.

Meeting protocol. When we get to the comment period, I'd like to stress that you go in the order that you signed up in, that you signed up for with the cards. Arlene, are you going to call the names in order?

MS. KREUSCH: Yes, I will.

LIEUTENANT COLONEL MARK FEIERSTEIN: I ask that you limit your comments to five minutes or less, please. That's so everyone can get a chance to comment and use the microphone, unless you're as loud as I am. Next slide, please.

This is an overview of what we're going to discuss. Next slide.

Congress gave the FUSRAP Program to the Corps

of Engineers in 1997. The bottom line of what we're trying to do here is -- sir?

MR. FINCH: Could you move the curtain so we can see the rest of it?

LT. COLONEL MARK FEIERSTEIN: How's that?

MR. FINCH: Good.

LT. COLONEL MARK FEIERSTEIN: Let me also point out that we have hard copies of these slides if you'd like to take those with you on your way out. There's a stack about a foot thick on the table back there. Okay. Bottom line of what we're trying to do on this site, as with any site, is to do it right the first time, and by that I mean, remediate so that the site is protective of human health and the environment, and to do so in a timely manner, in accordance with applicable laws. Next slide, please.

We're going to show you tonight that our plan does comply with applicable laws. It is protective of health in the environment and does allow free release of the site. Our modeling indicates that the average uranium levels left behind, when averaged over a soil volume of 2,000 square meters, is going to be less than 60 picocuries per gram. That's what our modeling indicates. There was some concern because that is an estimate. There was some concern over that number.

So what we're doing tonight is we're going to commit to meet that number. Now, again, that was an estimate based on modeling, but I'm here to tell you tonight that we're going to commit to make that. Next slide.

What I'd like to do, then, is turn it over to the project manager, Ray Pilon, and he's going to give you an overview of the Linde Site and explain exactly how we're going to do that, and get into some more specifics with the numbers. Ray.

MR. PILON: Thank you, sir. This is our second meeting. As the Colonel mentioned, we'll go through the site history. There's some folks here that weren't here last time. Trying to make everybody understand what the process was 40 some years ago. We'll talk about the alternatives that the Corps of Engineers has evaluated, explain what the criteria is for cleaning it up, explain the modeling that the Colonel mentioned, and describe what our quality assurance process is to insure that what we say we're going to do we'll actually do, and we'll identify the schedule and then take comments from anyone who wishes to make them.

The FUSRAP -- let me start off. In the 1940's, the Manhattan Engineering District came to Tonawanda and they were -- basically, they processed

uranium at the Linde Site, and some of that process contaminated some of the facilities there. The FUSRAP Program is Formerly Utilized Sites Remedial Action Program, that was authorized by Congress in 1974 to actually address the contamination and take care of it and clean it up, and that's where we are today.

The Linde Site was officially designated into the program in 1980, and for the past 17 years, that program was administered by the Department of Energy. That program transferred to the Corps in October 1997, and we're here today, two years later, with a plan to present to the town, to you. And when I first started our first meeting I said, this is a great day for Tonawanda, and I still believe it is, and we'll show you why. Next slide, please.

Some of the history. There were some major studies done by our predecessors in 1993. We've had medial investigations, baseline risk assessments, feasibility studies, and the Department of Energy released a proposed plan in 1993. In that plan they released, it had some major concerns to the community. They wanted to have an on-site disposal facility, and it met with strong resistance, and that plan was pretty much dropped from future consideration.

Since that time, the Corps of Engineers --

next slide, please -- the Corps of Engineers has produced a number of reports. We've looked at groundwater. There were some injection wells at the site. We took a look at the groundwater issues. We've done a radiological assessment and we came up with a guideline derivation which kind of presented the criteria that we planned on using to make the site safe, and we've addended the feasibility study that was produced by the Department of Energy to bring it up to current standards and we released a proposed plan in March. This presentation is the second one we've had on the proposed plan. So that's, basically, the studies that have been done since the Corps has been involved, and you saw the studies done by the D.O.E. Next slide, please.

Okay. For those who are unfamiliar, maybe you've never been in a Prax Air facility, this is Sheridan Drive up here. We're in the school that's over in this area here. Sheridan Park Golf Course is up in here. I think everybody is familiar with the neighborhood. The Prax Air facility itself is over 190 acres. There's a number of buildings. This past year Building 30 was demolished by the Corps. That was done last fall. Building 14 has been decontaminated for radioactive contamination in the

building, and there's a Bright-Knox research and development for Prax Air. It's important to the community and important to the country. Next slide, please.

Okay. This may be hard for you to see, but hopefully you can see it. The blue areas that are shaded on this map is where we know the contamination exists in the soils. We mentioned Building 30 was demolished. There's a slab that's existing there today. Our proposed plan that we're presenting addresses each of these areas. We're planning on excavating the soils, going into tunnels. Subsurface anomalies exist off Building 57. We believe there may be a vault there. We have a plan to go in, dig it up and haul it out of the state. That's pretty much saying it in about 10 words. We're going to dig it up and haul it out of here, and when we're done the site will be determined to be, under existing federal and state laws, be free release for any purpose.

The one exception with this is Building 14. As I mentioned, the building is -- we decontaminated the interior of the building. We know there's some contamination existing on the outside brick. It's minor, but it's above guidelines. Our plan addresses that. We'll go in and decontaminate the exterior of

the building. What we're not addressing or proposing to address is the subsurface soils that exist actually beneath the foundation of the building, and based on our modeling, we believe the soils below that, which are inaccessible and out of human contact, are contaminated, and we plan on addressing that with providing, perhaps, institutional controls or some kind of restrictions. If that building is considered for demolition in the future, we'd have to come in and insure that that would -- the soils would be addressed separately. Next slide, please.

Okay. The alternatives are -- I pretty much described them. The one in the dark box is excavation, decontamination of Building 14 and placing institutional controls if necessary. We've also considered demolishing Building 14. That's an option. Right now the preferred alternative that we are presenting keeps Building 14 intact, but addresses all the other areas within the Linde property, and the cost associated with that is, roughly, $28 million. Next slide, please.

Okay. I mentioned there was a guideline derivation radiological assessment performed, and based on that, what we've done is we looked at the contamination, the radionuclides that contaminate this

site. That's, basically, uranium, thorium and radium. We look at all the laws and regulations, and there's an existing regulation in the Code of Federal Regulations, 40 CFR 192, that addresses radium and thorium, in that it allows for us to cleanup the concentration in the first 18 centimeters of soils to 5 picocuries per gram, and below 18 centimeters we can get to 15 picocuries per gram. These units are in picocuries per gram. It's addressed in an asterisks down there.

The uranium is a different radionuclide that's not covered under the 40 CFR. So what the Corps has done is they've done a risk base assessment and they've come up with a level that equals the risk associated with the radium and thorium, and that is 600 picocuries per gram at the surface, the first 6 inches. It's actually 18 centimeters of soil. So that's the criteria that we've modeled for, and we've done risk assessments, and when we use this criteria, the results of -- I'll show it on the next slide. okay. What -- do you recall I said the radium criteria was 5? Our modeling shows that the radium criteria will actually be somewhere around 3, and when I mentioned the 600 for uranium, our model shows, in the worst impacted area on the site -- the entire site

is not contaminated, but we've gone to the worst impacted areas on the site, taken the worst case scenarios, and the highest elevated reading we expect would be somewhere around 51.

So based on the modeling results, the Colonel has told us to proceed on and commit to achieving at least below 60 on the uranium, and we've done, also, a comparison on what the differences are, and there's really not much as far as exposure or dosage. This here would show what the exposure is for a commercial industrial scenario. The site is owned -- is an industrial site, and plans are, for the foreseeable future, that it remain existing industrial. We've been working with the local officials and they agree that's the right approach to use. So the exposure that is a dose -- people are familiar with dose -- when we cleanup the worst impacted area, the exposure on uranium is equivalent to three-tenths of a millirem per year. Next slide, please.

Okay. Now, this compares what the total is, radium, thorium and uranium. The previous slide showed the total was around 6. When you compare that to existing guidance or regulations that exist -- the Nuclear Regulatory Commission has guidelines that say any activity should not exceed 25 millirems per year,

and you'll see that The Corps' plan is well below that at 6. E.P.A. also has similar guidance, and we're below the E.P.A. guidance also. Next slide, please.

Okay. This pretty much is a repeat of what the Colonel told us to do as far as the commitment. The Corps will commit to making sure the uranium levels are below 60. As I mentioned, the modeling showed it would be 51 in the worst areas, and it will be well below that in other areas, and this is based on averaging, a volume average over 2,000 square meters at three meters thick, and that's based on the model criteria that was used to develop that. Next slide, please.

Okay. I want to talk a little bit about quality control and quality assurance. The Corps is -- we're using prequalified radiation contractors that are experienced in the field. They've been there for years. That begins the quality control process. We don't use anybody that's not well-qualified. The Corps also provides full time on-site inspectors on-site to insure that the work is being performed in accordance with our specifications.

The Corps also visits the site with various technical experts, health physicists, rad technicians, anybody we need we'll bring out. We also have

confirmatory samples. The contractor will be taking samples and sending them out to a lab. The Corps does independent confirmatory samples. We send them out to our own lab just to make sure that what the contractor is showing us is legitimate and there's no mistakes made. Next slide, please.

Okay. The information that the Corps gathers is shared with the New York State Department of Environmental Conservation, we'll share it with the Town of Tonawanda, Erie County. Anybody who wants to be involved, to review the data, what we'll do is provide that to them. The quality assurance program is also administered independently of project management. I'm a project manager. I report to the Colonel. Quality assurance folks don't work for me, they don't work for the project management side of the house. They're in engineering and they report directly to the Colonel, and while all this is going on, New York State Department of Environmental Conservation visits us on a routine basis. Sometimes they knock on the door when we don't expect them, but they're welcome to knock on the door any time, and they gather independent sampling and they have it tested at their own lab, and that's additional confirmation on the laboratory analysis. They check

us, we check the contractors. Everybody's checking everybody else. Next slide, please.

So in summary, the plan we have does meet all the applicable laws and regulations. It makes sure the health of people not only working on the site but the residents in the area are protective, and it allows free release of the site. Next slide, please.

Tell you right now, we're planning on ending our comment period. We started our comment period on April 27th. We've extended it for over 30 days, and right now we're closing the period June 11th. If anybody has any comments that they'd like to submit, please do so by that date.

Our schedule is to have a record of decision signed in late August -- or late July, I'm sorry, and begin remediation in August. The record of decision will include the directive our Colonel has told us to do with the commitment of making sure the average uranium is below 60, and if all goes well, we should be able to complete the remediation by the fall of 2000. Next slide, please.

Okay. The comments can be mailed to the Corps' FUSRAP office. It's at 1776 Niagara Street, Buffalo, New York 14207. If anybody needs a handout, there's various ones on the table in the back hall.

Next slide, please.

Okay. That pretty much wraps up my presentation on Linde. There was a meeting held about four weeks ago and there were some issues raised. I just wanted to let the people know that we did listen to you and we have some answers for you.

The first issue people were concerned about at the first meeting was 60 picocuries per gram versus 600 picocuries per gram. As a result of those concerns, the Corps went back and remodeled under various scenarios; we've looked at commercial, residential, farmers, tried to compare what our predecessor had, and we presented that information to Erie County and the Town of Tonawanda, and I think we're on track. I think we have support, and perhaps you'll confirm that in your comments.

There was an issue with Rattlesnake Creek. That's not on the Linde Site. That's a creek that's off the Ashland facility that's off River Road. There was an issue that uranium was discovered in Rattlesnake Creek and the Corps, the Corps was the one that found that. We're investigating it, and we expect a study or a report on that to be available in the next week or so, and that will be shared with New York State Department of Environmental Conservation

and the CANiT consultant and the Town of Tonawanda, and we will do whatever we need to do to make that site safe.

There was an issue with independent verification contractors. The Corps' position or policy is that we will not use them. We feel that our quality assurance, quality control process exceeds the, exceeds that process. So that's basically been eliminated from further consideration.

People mentioned -- another issue was radiological licensing. People were trying to allude that there is -- there'd be a license required once we're done, and we've investigated that, and based on that investigation, we determined there will not be a licensed required.

And last but not least, the New York State TAGM, TAGM stands for technical administrative guidance memorandum. That's a non promulgated guidance memo. What that TAGM does is identifies that the level of exposure should not be above 10 millirems per year, and as I showed you in our presentation, the plan that we have does meet the TAGM. We're not required to make it. Our plan will be 6 millirems at -- under the industrial scenario. So even though it's not something that we have to abide by, it's a

coincidence that we met it. Next slide, please.

Okay. I'll turn this over to Arlene. She's going to lead off the comment process. Got a list of names. She's asking that one person speak at a time. Limit that to a five minute presentation to give everybody an opportunity to speak, and if at all possible, use a microphone. Thank you. Arlene.

MS. KREUSCH: Okay. I will be calling you in the order in which I received the cards. With respect to elected officials, Chuck Swanek, Chairman of the Erie County Legislature. Richard Tobe, representing the Erie County Department of Environment and Planning and the Coalition Against Nuclear Materials in Tonawanda.

MR. TOBE: Thank you. As was said, my name is Richard Tobe. I'm Commissioner of the Erie County Department of Environment and Planning, and Chairman of CANiT, which is a federation of elected officials who were formed 12 years ago to deal with radioactive waste in the Town of Tonawanda and the FUSRAP process. CANiT is a bipartisan committee of elected officials who have, for the last 11 years, pursued an objective of a Tonawanda free from the legacy of the radioactive contamination resulting from the Manhattan Project. CANiT continues to insist on the cleanup which is

protective of public health and the environment, provides remediated sites cleaned to a standard that will allow unrestricted use and that will ultimately enable the unencumbered implementation of the Town Master Plan.

I first want to thank Congressman LaFalce for his continued involvement and participation in the process to insure the goals of CANiT are met by the federal government. In addition, I wish to thank the Army Corps of Engineers for their willingness to hear our concerns, respond to them in an appropriate and timely fashion, and for providing funding for CANiT's technical consultant, MJW Corporation. I want to thank Lieutenant Colonel Feierstein for agreeing to extend the comment period for the proposed plan for the FUSRAP former Linde Site. Without that extension, our ability to prepare and understand the proposal wouldn't have been possible. So thank you for that.

I also want to recognize the Army Corps of Engineers for their accomplishments thus far with the Tonawanda FUSRAP Program. For the first time in 50 years, radioactive waste has left Tonawanda. The war years are long over, the studying is over, and finally, the talking and proposal making is over. The Corps has taken action on Ashland 2 and now is ready

to move to Linde. The remediation at the Ashland 2 site has been implemented with efficiency and has resulted in a cleanup which has exceeded the established criteria. These actions speak louder than words. The Corps' efforts have exceeded expectations, and we hope this will continue as the program proceeds from site to site.

On April 22nd of this year the Corps of Engineers held a public hearing here at the Holmes School. I testified on behalf of CANiT and raised a number of issues which needed to be addressed. Many of those issues were on the screen as one of the last several slides, and I was pleased that they were addressed as they were. One of the significant issues, and to us, the most significant is that the Corps had only that day released the funding needed to allow our technical consultant, MJW, to commence its review of the Corps' proposed Linde cleanup plan.

Happily now, Dr. David Dooley has been able to complete his study and reported to CANiT that The Corps' proposed cleanup, as modified over the last several weeks, and as described tonight, will be fully protective of public health and will allow for the unrestricted use of the Linde Site, except for the Building 14 issue, which we'll have to discuss, and

which Chuck Swanek will discuss. The most stringent radioactive exposure criteria will be achieved or exceeded, and Dr. David Dooley has essentially reported that we should feel comfortable in agreeing and accepting the proposed plan, and he's issued a report to us, which we will make available to anyone if they want it, if you let Paul Krantz or David Dooley know. Paul, why don't you raise your hand. You can get a copy of the report from him.

Our experience with hazardous site remedial actions in the public sector usually calls for the use of an independent verification contractor to assure that the cleanup action attains the level of cleanliness specified in the work plans. The use of an IVC, independent verification contractor, is the first choice of CANiT. We are, however, prepared to accept the current structure of The Corps' quality assurance procedures, provided that these actions continue to receive the scrutiny of the New York State Department of Environmental Conservation and CANiT'S technical consultant. We are prepared to accept The Corps' quality assurance program due to the excellent track record at Ashland 2, the built-in protections which the Corps has in place, and because of the high level of scrutiny that is available for this cleanup

effort.

Given The Corps' track record thus far with the Tonawanda FUSRAP Program, CANiT is willing to accept the current proposal for the Linde Site remediation. CANiT will continue to monitor and review the efforts of the Corps to execute this plan and incorporate its criteria into work specifications. CANiT is pleased with the cooperative nature of the discussions, and looks forward to progress in cleaning and clearing this site and all others from its radioactive legacy.

MS. KREUSCH: Chuck Swanek, Chairman of the Erie County Legislature.

MR. SWANEK: Thank you, and it's a pleasure to be here this evening, and before I comment on this, I have to acknowledge that the last time I met with the Army Corps of Engineers -- most of you are my constituents -- you know that I do have this temper, it takes awhile, but they did get the wrath of my temper the last time. So I want to apologize for that, but after 11 years of trying to come to grips with cleaning up the radioactive material, the FUSRAP material left from the development of the first nuclear bomb, we had run into a glitch, and it was a glitch that we all felt needed to be resolved, and I'm

pleased to report to you that we believe, CANiT, the elected officials, who have spent most of our career on this issue, are satisfied with the Army Corps of Engineers' review and modifications that they've made.

It is very, very important for us to clean the sites up and to do them in a prompt fashion due to the fact that they are here now. There is an investigation and review underway, and there is monies to take the material away from this region, and we've had some really significant successes with the Ashland sites, but it has been a long process. There's been a number of meetings. After the last time we had an opportunity to sit and talk, and we've come to what we believe to be a standard that is in full compliance with what we agreed with back in 1997, '96, '97, with the Department of Energy. And so we are moving forward again, and the key is for all of us; constituents, elected officials and citizens, to move this material out safely, always having the interest of human health at the foremost point.

There is one other issue that I just want to mention, and that is Building No. 14, which involves Prax Air and the Army Corps of Engineers. One of the things that we have worked on throughout these 11 years is when the cleanup did take place that the land

would be not restricted. There'd be no land restriction whatsoever. So this way, based on the zoning of the Town of Tonawanda, it could be used effectively from this time on into the future. The Building No. 14 creates some significant issues. One is that it is a contaminated building, not significantly contaminated, but there is radioactive material there in that building, underneath and around. Prax Air, at the same time, has used the building for a lot of their research and development and has significant equipment and other materials in the building. What we would hope that the two parties could do, and all of us as elected officials have had a discussion on this, and we sincerely mean this, we think it's critically important that Building 14 be dealt with. That to have any land restriction on the sites once the cleanup is done would really, we would miss an opportunity to say once and for all the radioactive material, the issue, the FUSRAP issue is over with, and while the Army Corps of Engineers has extended their comment period one more week to deal with Building No. 14, it is our recommendation from CANiT and from myself that we do everything conceivable to somehow get this building cleaned up to insure that there's no deed restriction whatsoever

once the Army Corps has completed all of its work. And there is additional work that will be done even beyond what their cleanup is right now. So between Prax Air -- and I know it's a significant issue for you to deal with all of what you're doing over there, and the Corps because it's on a tight time frame. There has to be a conclusion reached where the material is cleaned up. So we would ask both of you to work on that, the elected side. The CANiT organization is more than willing to help assist in any way to insure that that's done.

Then just in conclusion, to say that for all of us that have been involved in this thing, I know, going back over the years -- and I look at many folks, and I see we got Jim back again, and some other folks -- we've all sort of grown old over this issue. We've had to compromise in some cases to get the cleanup done. Not a compromise that poses any health threats to the citizens, but to try to deal with money, clean it up correctly, the health concerns, and the needs of the constituency, and we've been very successful with Ashland 1 and Ashland 2, and we want to be successful with Prax Air, and we want to finish this project up in our time and we want it out of here.

So it's taken a lot of us a long time, but I do think we do have a consensus and we can move forward and get this job done. So with that, I'd ask the Corps to work with Prax Air and to get this cleaned up, this portion cleaned up as quickly as possible, and then we'll move on to the next section. Thank you very much.

MS. KREUSCH: Thank you. Mr. Carl Calabrese, Town of Tonawanda Supervisor.

MR. CALABRESE: Thank you. I think with this announcement this evening and this presentation that we are back on track for a very sound and thorough cleanup of the Prax Air site and the continuation of other sites in the future. At the last meeting I expressed a great disappointment at what I saw was a change in direction, and I wanted to reserve judgment, however, because my experience dealing with the Corps of Engineers to that point had been very, very favorable, specially when compared to the old days of the Department of Energy. So I did reserve judgment, hoping that subsequent meetings would produce a modification and a change of what we saw in this building just a few weeks ago.

Over these past several weeks there have been a number of meetings and conversations and

re-examination, and that produced the numbers that you saw tonight, and I am very pleased to see those numbers and very pleased with the reaction and the responsiveness of the Corps of Engineers. This is a group that's focused on the prize, and the prize is cleaning up this material and removing dirt from the Town of Tonawanda to a proper facility for long-term storage. That focus was never existent before when we were dealing with the U.S. Department of Energy, and it has been since the Corps came into the picture, and it continues to be, and again, we had a problem and we needed to refocus. The reaction was everything you could expect of a government agency and even beyond. So I'm pleased with that. I'm glad I did reserve judgment.

Colonel Feierstein has been a pleasure to work with, as his predecessor Colonel Conrad was. As I said, I think we're back on track to cleaning up land and opening up areas of land in the Town of Tonawanda that have been restricted before because of this nuclear remedy.

MS. KREUSCH: I'm going to call off the rest of the cards. If you're representing an organization, please state the name of the organization that you're representing. Mr. Don Finch.

MR. FINCH: I'll be able to talk from over here. I have a couple of questions. About the third slide in, and it was repeated later in a statement, based on public input the level will be less than 60 picocuries per gram. That leaves a little question here. Is that a misstatement, due to lack of public input, or just what does that sentence mean? I'd like a little explanation on that.

MR. PILON: I can explain that. As we said in the beginning, there's a CERCLA process, Comprehensive Environmental Response Compensation Liability Act, okay. Under that process, there's nine criteria that's evaluated; protectiveness to health is one, and it goes right around, and one of those is community involvement and acceptance. When we had our first public meeting there was some concerns raised. We went back and looked at it, and based on our modeling, we believe that we can commit to the results that the model shows. So what we've done is we confirmed that the process does work.

MR. FINCH: I was just wondering where this public comment statement comes in, because really, there wasn't a tremendous amount of comment. I've been working on this thing for five years. The town residents are really asleep on the deal. So I don't

know about that. I've been trained, by the way, by many government agencies to be very, very, very weary of what's done, and this is no disrespect towards any particular one. They trained me, they disciplined me, so if I sound controversial, that's where it's coming from. Then I was wondering, why was the comment period extended twice?

LIEUTENANT COLONEL MARK FEIERSTEIN: Let me address your first question first. Maybe I'm overly sensitive, but I view my role here, as the Commander of the District, as a very important one, where I not only have to remediate, but I have to gain and maintain public trust, and I personally, at the last public meeting, felt concerned about the picocurie levels of uranium, so based on that, I committed the Corps to that 60 picocurie standard, and that is -- it's not part of the formal process, per se. I mean, that's not the way we normally conduct business, and I did that above and beyond the standards, the standard remediation levels. This modeling that we do is an estimate of what is going to remain in the ground when we're done trying to remediate to the 5 and 15 levels, and what I've done is committed to what is going to remain in the ground, and we did not have that before. That's point number one.

Point number two -- what was your second question, sir?

MR. FINCH: Comment period.

LIEUTENANT COLONEL MARK FEIERSTEIN: Why did I extend the comment period? There was a request to extend the comment period last time. When we release the public plan or proposed plan, normally there's a 30 day period to allow the public to comment. There were requests to extend it, so I extended it for 30 days. That's 60. Because we're having a public meeting tonight -- and I'm not required in any way, shape or form to extend it again, but because we're having a public meeting tonight, I wanted to extend it again, even though we're behind in our remediation schedule, just for public faith and trust, in case anyone had any more comments they wanted to make on this. So what I've done is gone from 30 days to, what is it, 71 days. I've extended the period, roughly, 41 additional days just to make sure that anyone that has any comments has full opportunity to air them.

And one more point I'd like to make, and this is a side issue, but it's been kind of danced around. On the independent verification contractor. Ray said that is -- that we don't feel that it's necessary because our process is more stringent than it would be

if we just hired someone to come and independently check our stuff. But I will make a public commitment to you all, and I've made this to CANiT, and we can invite members of the public out to -- this is when we do our quality assurance, quality control of the remediation here. Not only do I have a very rigorous structure set up in the district to make sure that there's no conflicts of interest, but DEC is going to check it, and also, I'd invite anyone from CANiT, the public, F.A.C.T.S, whatever, to come out with me and we can, in the full scrutiny of the media, under the, you know, under sunshine and all the media spotlight, we can choose some sites to pick to verify that what we're saying we're doing we're actually doing.

So what Ray said about that being open to the community and the public and the media, I fully mean that, and take me up on it. I'm making the offer. Call me, and after we remediate, we'll go out on-site and pick sites at random, or someone can say, that looks hot, we'll sample it and make sure that everyone feels comfortable about what we're doing here. That's extremely important to the Corps, not just to remediate it, but that you feel comfortable with the site also.

MR. FINCH: One final thing. I'm very

suspicious, and when I saw this coming in at the 600 figure, and now it's been lowered to the 60 figure -- I've seen bait and switch. Again, I'm suspicious by nature. I have to say one thing, F.A.C.T.S. does not go along even with the 60. It is not where we would, ourselves, come from. It looks to me -- and this is only my personal opinion -- we'll throw 600 at the public, if they complain too much we'll drop it down to 60. I think 60 was where it more or less all started at anyway. So we're not really gaining anything. Thank you very much.

LIEUTENANT COLONEL MARK FEIERSTEIN: I'd like to make a statement on that. Uranium is not the driving radionuclide, radium is. The slides we put up show -- what was it, point 2 or point 3 millirems.

MR. PILON: Point 3.

LIEUTENANT COLONEL MARK FEIERSTEIN: As a matter of fact, the level of remediation of thorium is driven primarily by its decay to radium. So radium is the driving radionuclide, and that is the major concern. Uranium is secondary. You recall the slide. Would you like to see the slide again, sir?

MR. FINCH: No, I saw it quite a few times.

LIEUTENANT COLONEL MARK FEIERSTEIN: Even with all the three radionuclides; uranium, thorium and

radium, after we remediate the exposure that an on-site worker will get in a year will not exceed 6 millirems, and again, as Ray pointed out, that means -- that's within the NRC guidelines, it's within the TAGM, even though we're not required to meet that. It meets all requirements of CERCLA and is definitely very conservative. That's been independently verified, by the way, and we open our calculations up, and anyone is welcome to go through those. We have nothing to hide.

MR. FINCH: Thank you.

MS. KREUSCH: Mr. Ralph Krieger.

MR. KRIEGER: I have to make a little correction. I found out about another merger with paper workers, it's Local 1 -- 0215, that's PACE. Worked at Prax Air for 32 years. 14 was always considered, by somewhat of a noted specialist, that it was not a building that was contaminated. Now all of a sudden the last thing here that we're hearing, it's a problem. My problem is a simple one. If I recall correctly, Building 14 was built sometime, or started about 1937. It was primarily a pilot project for Union Carbide when they were using the process to extract the uranium. That's basically why that came here from the Manhattan Project, because they had some

experience in doing that.

My question is -- and I don't know if anyone can answer it here tonight -- is, how did that much contamination get under the foundation of a building that's four or five stories high when it was already built and the floor was already poured and sewers already put in? How did that much contamination get there under a building? Where did that come from? That's my question. Thank you.

MS. KREUSCH: Thank you. Mr. Jim Rauch.

MR. RAUCH: My name's James Rauch. I'm a pharmacist working on radiation issues for -- back to 1983 involving a Niagara Falls storage site out in the Town of Lewiston/Porter. Worked with F.A.C.T.S. on the Tonawanda site when the Department of Energy released their draft environmental impact statement in 1993. I fully -- I want to say, first of all, I'm not going to be able to join in any of the feel good talk of CANiT or the politicians, and I fully expect to be cut off. I might as well say this right up. I fully expect to be limited to five minutes. So I'll proceed as rapidly as possible here.

F.A.C.T.S. has instituted a lawsuit in Federal District Court to prevent this cleanup from going forward as is constituted. The Army Corps of

Engineers has no radiological regulatory authority and they're going about setting criteria for cleanup and picking and choosing, as they call them, ARARs from a CERCLA list. The simple facts are that D.E.C. is not on board, or they weren't on board as of the beginning of April.

The DEC radiation director belongs to a council of radiation control, state radiation control directors, or a group. In early April they were still petitioning for NRC, U.S. regulatory agency to produce regulatory control of this cleanup, and that means provide the proper cleanup material. The State of New York's interest, quite cynically in my view, is only because material classified as source material may still be left behind, and DEC, the State of New York will be responsible for it. That's, cynically, their only interest, because up until now, quite frankly, folks, they have been rubber stamping everything that D.O.E. has wanted to do, and that has been contrary to a long established public health cleanup criteria.

They have a program called the SDMP. Sites such as this qualify for the program. The criteria involved in that cleanup program would clean Tonawanda up to 5 picocuries for all the radionuclides across-the-board. Option 1 of the branch technical

position on uranium and thorium sites. That's what this community should get. That's the minimum we should get. This business about scenarios, industrial commercial scenarios, folks, this is an area where people are going to live for a long time, have lived, have grown crops in the past, have drunk groundwater, okay. This limited exposure that they calculated these low doses for is a very limited industrial commercial exposure. It's not going to protect people for the tens of thousands of years that this stuff is radioactive.

The Commander correctly pointed out that the radium is the immediate problem because it's more mobile, it's toxic, it's bone concentrating, it decays to radon gas, which is a very primary concern in residential construction and houses. By the way, radon isn't addressed here at all. Radon is simply brushed under the main exposure product at the end here. Radon gas is not even being counted in here, okay, in the criteria. It's addressed under separate, very laxed E.P.A. criterion that allows 200 millirems per year of exposure, basically.

So basically, what F.A.C.T.S. has done is gone to Federal Court. We sought an immediate restraining order to prevent Ashland 2 from being

remediated, because once they get the dozers and the scoops out there, they're going to blend and do what CANiT has been promised they aren't going to get, and that is blending in with the rest of the material. So what we have here is a certain amount of radioactivity on the site. They haven't asked for it in the original comments. They haven't given us radioactivities. They won't tell us how much they're going to leave behind. They say that's not their responsibility under CERCLA. So the community is going to be left with this stuff spread all over the site. It decays to thorium, okay. Thorium decays to radium. They said a 40 picocurie cleanup at Ashland. They set that because under CERCLA you only have to really meet 200 years of exposed safety under their projective scenario of exposure, but they went to a 1,000. At 1,000, with 40 picocuries of thorium blended throughout that site, okay, in a thousand years you'll have 15 picocuries of radium. You'll build back up the radium, okay. That's all they have to do under CERCLA is meet that standard. Is that good enough for us? That means that 1,000 years from now the site will be out of standard again, and people, if we're still living here we'll be exposed. That's not what F.A.C.T.S. advocates. F.A.C.T.S.

advocates getting this material cleaned up properly.

As far as uranium goes, if you leave 600 picocuries of uranium, you'll have much, much more. We're selling away our future when we've got a desert location where all this stuff can be moved, which is what F.A.C.T.S. advocated, and have it stored at government contaminated property.

LIEUTENANT COLONEL MARK FEIERSTEIN: Thank you. We'd appreciate it if you let someone else speak.

MR. RAUCH: The Attorney Generally is a newely elected democrat. The Attorney General has the authority to prosecute this without Governor Pataki and the rest of the D.E.C. --

LIEUTENANT COLONEL MARK FEIERSTEIN: I'll address a couple of points now. We will address the inaccuracy point by point in writing --

MR. RAUCH: Will I have an opportunity to speak? Thank you.

LIEUTENANT COLONEL MARK FEIERSTEIN: -- if I remember, in the formal written comments here. On the lawsuit, all I'll say is I'll let the results of that speak for themselves. Dave, you had a point about Ashland you wanted to make.

MS. BARCZAK: Last summer the Judge

dismissed all action against the Corps of Engineers on the lawsuit. Therefore, we proceeded with Ashland 1 and the Building 30 demolition.

MR. CONBOY: David Conboy from the Corps of Engineers. Our cleanup criteria was 40 picocuries. We fully expected when we remediated the site we'd end up with 12 picocuries per milligram. When we completed it we ended up with a site-wide average of about 5 picocuries per gram. So we're well below any of the criteria that Jim has pointed out.

LIEUTENANT COLONEL MARK FEIERSTEIN: And that is due to the conservative nature of our remediation. We're very, very careful, and we err on the side of caution. We'll address all the inaccuracies point by point in writing. Who's next?

MS. KREUSCH: Mr. Alan Bruce.

MR. BRUCE: I've been working in this business since 1951, first learning about it at the University of Rochester, supported on a fellowship by the Atomic Energy Commission, and I was at Oakridge National Laboratory, and I've been at U.B. 40 years and retired two years ago and taught this subject, biological effects of radiation, radiation safety and how to institute programs and carry them out, and the use of instrumentation for all of this. So I've been

in this a long time, and I must say, it hasn't been exactly a happy business to be in all these years. The rules have changed from when I started, a thin pamphlet so that I could keep up with everything. I solved a lot of the problems. We have had very few problems on the University campus with getting rid of it, but it's been extremely expensive and got expensiver as time went on.

I would like to see the government cleanup its mess to the same amount that us users of radioactivity have had to do for all these years, but then nothing is quite fair, and I guess I wouldn't really expect it to be another way. But what I would like to address is what we base all this on. Now, one of the problems is that very little research has been done on very low levels of radioactivity. Nobody believed all levels were dangerous, and we have -- slowly there has been an awakening to this. So that the amount of basic research and measurements that have been done is far less at low levels than at the other end.

People have been more interested with the levels around nuclear detonation and a lot of other things, very high levels of radiation. Research has not been supported at the low end because most people

didn't believe in the business, didn't believe low levels were any problem. This isn't quite -- has not quite been found to be true.

The other thing is the regulations that are out there. The regulations didn't come down to being carved in stone. It didn't come down from on high. These are things that have been instituted by groups using inadequate research and guesses as to where it ought to be. Of course, they don't call them guesses, but statisticians have been associated with this, and Mark Twain made comments about statisticians, they're liars, damn liars, and statisticians -- I don't mean to insult statisticians, but having published a number of papers and carried out research in my life, and observing others that do the same thing, if you want to prove something, you look at it and say, is it really true or isn't it, and if it -- what you think is true, you try one method of statistics after another until you find one that agrees with what you're hypothesis was about how it ought to come out. Now, I never did that myself. I didn't apply statistics to mine. I could look at the data and say, everybody will accept this. Of course, I did a lot of my research on microorganisms where you can study effects of radiation on zillions of it, and it wasn't

like animal studies, where animals are very expensive so you try to do your study with as few as possible, and there are real problems in coming up with solid data in that way.

To comment on the regulations. The ones that came out in 1994 that apply, the more recent ones, if you look up radon and you carry through the calculations and measure what is through our atmosphere, common background radon and decay products in there, allowed release from facilities using radioactive material is below what's in the air anyway, which tells me the equations that they use and the safety factors that they plug in brought radon way below what we have lived in forever as the human race.

So there's something wrong with the regulations. They might not all be in the same direction, but anyway, they're not perfect. What I would like to get at is, we'd be better off to consider the levels with respect to what mother nature has put there and what populations have lived with since we became a species. Now, if you look up what the background radioactivity is from a variety of nuclides that are commonly found, you add these up and it comes up to about 15, slightly over 15 picocuries per gram. The world wide average of radioactivity --

MS. KREUSCH: Excuse me, Mr. Bruce.

MR. BRUCE: Now, these contribute different things, but when you measure this, it's rather difficult to sort out all these radioactivities and identify what they are when they are present in very low level. It's very easy if you have large amounts because you can look at the spectrum, you can measure the energy, but when you're down in the few picocuries per gram range, there is so little radioactivity coming out that you have to count your samples for extremely long periods of time, and the natural background fouls it all up.

MS. KREUSCH: Mr. Bruce, can you wrap up? You've used your five minutes up.

MR. BRUCE: I've put a lot of people to sleep. Okay. The other thing about -- just one more word about the level of radiation in the regulations, is that they started out five hours per day, early in the century, was allowed to workers, and it slowly came down to a tenth of an R per day. You can see where it's going. All the regulations have gotten lower and lower in what's being allowed and, in fact, when I first came to work at the University -- I plotted this on a log plot, extrapolated down, and by now we shouldn't be able to release anything because

anything we release is going to be above natural background, if you keep extrapolating down and making them lower. So it gets very complicated, but the other thing I -- just one more word.

The chemical problem with uranium. Uranium is more dangerous as a chemical than from the radioactive unit. It's extremely toxic. At Rochester one of the big projects was studying these high atomic number of materials, and uranium did in all sorts of things, and it was more from the chemical.

MS. KREUSCH: Excuse me, Mr. Bruce.

MR. BRUCE: I've said enough.

MS. KREUSCH: Thank you. Lee Lambert, you have a question mark on your card. Did you want to comment?

MS. LAMBERT: Yes. I was very disappointed with the acceptance from the CANiT Committee of this proposal as it is. I really expected them to continue some of the anger that I saw at the last meeting. I have been in contact with the DEC, and I don't know if most of the audience knows this, or the audience knows it, but the DEC has been corresponding with the Corps, Army Corps, and has told them numerous times, and several of them requested the use of an independent verification contractor, and they couldn't understand

why the Army could not agree to this and wanted them to do likewise. That has not been brought up tonight, and I just thought I'd let everybody know that's what the DEC is saying. Perhaps Jim is a little concerned. They have been doing their job. The release for industrial land use includes only industrial commercial and the -- that means that a thousand years from now -- which Jim has pointed out, and other people have -- it will still be contaminated, and the fact that they're asking for Building 14, even if they take it down -- and they don't want to take it down because it's contaminated underneath it -- but if they do take it down they'll have to clean up what's underneath it, and at some point -- that building is not going to last a thousand years -- it is going to come down. Someone else is going to inherit this land, and so are the people of this area. We can't assume, as the DEC said also in their comment, we cannot assume that this will be continued to be used as industrial commercial. We can't assume this will never be residential any more than we could assume that Love Canal, once it was discovered, would never be used for homes again, and we can go on with what Dr. Bruce has said, I'm sure, that, yes, there are some other circumstances to consider, but

nevertheless, if we're talking about a cleanup, and a chance for a good cleanup, why are we settling for 600? 600 could mean spread it around, it could mean rototill, it could mean average of 600 over here and nothing over there, and come up with 60 if you have enough averaging over three meters deep. So this could be a real problem. Let me see.

I just wanted to read you -- this is the D.E.C.'s comments. Pursuant to CERCLA, the Atomic Energy Act and the New York State Environmental Conservation Law, we do not concur with the proposed plan as currently written. The major problems include the following; the proposed uranium criterion of 600 picocuriums per gram is not acceptable. The Corps has not demonstrated that the 15 picocurium criterion is justified, and that relates to an E.P.A. directive. This E.P.A. directive allowed them to use the 15 picocuries. The proposed plan does not include the use of an independent verification contractor, and the methods the Corps plans to use to determine compliance with the cleanup criteria are not defined, and then they include specific comments related to that, and I think that's all I need to say. I think I've covered all my points.

I do want to make it -- I'm very disappointed

that the people in Tonawanda have not woken up to this situation. You see all these beautiful homes nearby here, and we can argue there's a lot of background radiation, that's true, but why should we sit still for this? Why should we say, that's okay, and leave Building 14, leave it to Prax Air? If they leave town, then what?

LIEUTENANT COLONEL MARK FEIERSTEIN: Three points, and I'm going to quote a couple of numbers off of top of my head that are going to go in the official record here, and I know these numbers off the top of my head because we've analyzed this thing to death.

First of all, about residential standards. The cleanup that we're doing here does meet residential standards, okay. We're remediating this site to the point that, given all applicable laws, regulations, et cetera, a housing development could be built on this site after we remediated. So it is being remediated to a residential, or it is being remediated so that it is fit for residential occupation. The millirems per year, given the assumptions of residential occupation, I believe is 21, is that correct?

MR. STEVENSON: Yes.

LIEUTENANT COLONEL MARK FEIERSTEIN: And

this is under the 25 NRC guidance. Point number two. D.E.C.'s statement that the 600 picocurie remediation level for uranium is unacceptable, I've seen that. That's incorrect, and it demonstrates a lack of understanding of the radionuclides that we're dealing with here. As I said before, the driving radionuclide is radium. The thorium remediation levels are calculated based on the half-life of thorium and its decay to radium. As far as the uranium goes, 600 versus 60 picocuries per gram means a millirem delta of point one millirems per year under the industrial commercial scenario. Point one millirems per year. I don't want to get into a whole lot of comparisons, but I think that you get about 5 or 6 millirems per year from the food that you eat. So we're talking an almost nonexistent difference there, and it just illustrates a lack of understanding of the radionuclides that we're dealing with.

Again, we're going to address all of these issues formally in writing, but you'll see when we address it in writing, they're going to be the same numbers that I just quoted to you and that I'm telling you is the level to which we've analyzed this.

One more point on the independent verification. The Corps is not going to have

independent verification of -- we're not going to hire a contractor to do that because our process is so rigid and our process is so rigorous and New York D.E.C. is verifying what we remediate, but in addition to that, it is open to the public, and we can do this with the media present and have you come out there and choose whatever sites you want to test and we will test those, and the media can follow it, and we'll watch the test results as they come in, and you're going to see that what I'm telling you is the truth, okay.

So we have a very rigorous process and we don't need to hire a contractor, because I'm telling you it's rigorous, and I invite you and the media out to watch us check it, and we'll address the rest of the points in writing.

MS. KREUSCH: Thank you. Kim Hanobeck, you had a question mark on your card. Do you wish to speak tonight?

MS. HANOBECK: I just have a quick question. I've lived in this area for 15 years and I have two kids that go to this school. I'm not sure -- I mean, there's two hot spots that are over here that they show is close to the school. Have they tested any soil by the schools yet? They say there's sirens

that will alarm the school. That makes me more nervous knowing that.

Another question. Why didn't you answer this gentleman's question that worked at Prax Air? Building 14, how did it get underneath it? If that building was never contaminated to begin with, how did it get in the building to begin with? Is it moving? Is it going into the soil and moving across different areas? Thank you.

MR. KENNA: Tom Kenna, project engineer. We aren't positive how the material got under there. The building was built in the 1930's to our knowledge. We don't know if it was the fill material that was used in the construction. As stated previously, the building was built in the 1930's, to the best of our knowledge, and we don't have definite answers on how that material got under there. We know it's under there. We don't know if it was the fill material that was used in the construction operations. Some of it may have leaked through the floor or out of floor drains. We aren't positive.

MS. HANOBECK: Have they tested any soils around the schools?

MR. KENNA: I believe there was one or two borings taken in the area. Again, to my knowledge,

those results were very low level, and there's also no reason to believe that any of the material was deposited in this area. So there was some limited sampling and testing.

MS. HANOBECK: Do they have reports on that?

MR. KENNA: That information is in the record. Yes.

LIEUTENANT COLONEL MARK FEIERSTEIN: If someone has reason to believe that there's some contamination at the schools, I'd like to know that, and we'll definitely check that out. Right now we have no reason to believe that there is, but please give me that information and we'll check it out.

MS. HANOBECK: It seems kind of if it wasn't in Building 14 and it might be -- who knows, it could be even under the school for anybody's knowing. If it's gone that far --

MR. SWANEK: In 1982 this thing broke lose with a study, a report that the state assembly did, and they released this issue, and big headlines, and radioactive material in the Town of Tonawanda, and contamination and everything else, and some may remember that. Since that time -- and the Colonel wasn't here at that time -- there's been just study

after study after study done by the Department of Energy. New York State got involved in it after the report was issued. There was a vehicle flown in here that went down every street that could document any radioactive material in the area as well, because there was a fear that some people may have taken some soil for landscaping or for vegetable gardens or whatever else, and all -- I mean, I'm not kidding you folks, there's this much paper on this issue, and the Department of Energy has it. To our knowledge, and all of the reports that I've read -- the County of Erie has constantly read the reports on this -- we have never seen anything that showed any significant result from the movement of this radioactive material, but you don't need to take my word for it. I'm not asking you to do that. I'm just trying to save you all of this, because we're not trying to bury you in paper. I have never in my life seen an issue studied so much as this issue. I think there's more money spent on studying this issue than there was on the cleanup. That's what finally brought this thing to a head. The County would be glad to supply you with information. We would gladly try to seek the original New York State Assembly report in 1982 that released that the radioactive material was here, and again, we

have never seen a report that -- and these reports were all released publicly, so they were documented in the newspaper, if there was anything that was found that would pose a threat other than what they have documented in their studies on the Linde Site and over at the two other sites where the material was. But we'll be glad to get that for you. I don't think he has -- this goes back 20 years, and I'm not sure they went back that far, but it's available and it's yours if you'd like it.

MS. HANOBECK: I have one other quick question.

MR. SWANEK: Not only did they bring in this piece of equipment to survey the material, but then they did a helicopter flight up and down every street, and Carl and I got calls because they thought we were attacking the area, because I think it was a military helicopter, and it documented -- you remember the darn thing, but they went at low levels and they went over every house and documented every piece of land and whether there was radioactive material, and then they did a study on that to see if there was any issue of radioactive contamination other than the normal background, and they found nothing as well, and that's documented too.

MS. HANOBECK: Can we get a copy of that?

MR. SWANEK: Talk to Mr. Tobe. We'll chase it. Over the 20 years it's this much. It's out there and it's been done. We got to a point where we were studied to death, and I can tell you, the Department of Energy, they had to spend -- and I don't have a figure -- but they had to spend between $10 to $15 million studying this issue. But you go through us and we'll get you to those agencies and find every piece of paper that's available out there on this thing. I didn't keep them. After 20 years, I figured we were beyond that.

LIEUTENANT COLONEL MARK FEIERSTEIN: I have one more thing, sir, then I'll get to you for your question. One more point. I said before that I was committed to full and complete disclosure in all of this. I'd like to extend an invitation to any of you to come by and visit us in the district, and if you'd like, we'll sit down and explain how we calculated out some of these numbers and show you in greater detail anything you want to see, because again, it's important not just to do the remediation, but it's important that you trust this, and Abraham Lincoln once said something to the effect that, if he even read let alone addressed all of the complaints that he

got, he would never have time to do anything else. So I don't expect to be able to conduct a public meeting like this without hearing opposition, you know, but again, I will make this totally and completely open, both the independent verification piece -- you can come back to the district, we'll take you around, show you where we work, how we calculate this stuff, go into more detail, any area you want, totally open, above board, no secrets, and I don't want anyone to think there's any conspiracy to hide anything. We have a web site. You can send me e-mails. Click on welcome. You get a picture of me there with a little e-mail link at the bottom. If you can stand looking at the picture, go down and click on the link. Send me e-mails. Call us, 879-4300, and I'll be happy to take you through the district and see how we do this. I would not get up here and say that wearing this uniform if that was not true. Sir?

MR. FINCH: There were two bio surveys done; one was a high level, one was a low level. When I got it through the Freedom of Information Act, I immediately got the one for the high level flyover. The one for the low level, couldn't find it. It's here, it's there. We don't know where it is. I ended up going to Vice President Gore, and just like that,

within two weeks I had not only the report but color photographs laying out, like, the levels of radiation involved with this low level survey, and I'd like to ask, this is the first I've ever heard mention of vehicles going on the street checking radioactivity, and I'd like to get together with somebody on that.

MR. SWANEK: We'll try to find all this stuff. '82 is when it started. We'll try to find all of it if that's what you need. We got some of it and I'm sure it's in a box somewhere.

MR. FINCH: Relating to the lawsuit. I'm not an attorney, our attorney is not here, so I have to use lay terms. That lawsuit is not dead. It is merely laying off to the side waiting till the whole cleanup operation is done, then it kicks in. Now, this is due to the CERCLA versus -- see, I'm not up on that, who's responsible for the material. So don't ever feel that it is dead. It is laying in the grass waiting till it's done. That's what we were ordered to do. Thank you.

MS. HANOBECK: I have one more quick question on what I was asking. What precautions are you going to take if there's an accident or something happens to the residents around this Prax Air area?

LIEUTENANT COLONEL MARK FEIERSTEIN: That's

a very good question. I'll pass it on to Ray and Tom.

MR. PILON: What we do, we have a monitor up on top of the school. They're air monitors, that's what they are, and there's an air monitoring plan that is produced by a contractor, it's required by us, and they surround the site and they're read every day. The health physicist checks the data, and if there's any indication of any elevated readings in the air, we stop the work, we see what's wrong. Hopefully it's just a bad monitor, but if it's a result of any activity the contractor is doing we stop them until we figure it out. We won't let them begin until he's either addressed the problem or we can figure out how to do it safely. They do run 24 hours a day every day.

MS. KREUSCH: Ralph, we'd like to finish the comments and then go to questions, is that okay? Ms. Dooley, you indicated --

MS. DOOLEY: My question was taken care of.

MS. KREUSCH: Thank you. Mr. Frank Lee.

MR. LEE: I was one of the few thousand people that made the atomic bomb. I saw a lot of uranium, I lived with it, and I'm fairly well acquainted with it, and it sort of surprised me that such an issue would be made of the so-called radiation

problem. In the past people had their issues to scare them and had to be corrected. The case of a witch you tied some unfortunate lady to a pole, piled some firewood around her and set it on fire, that took care of it. Today we have things like asbestos, that's a naughty word now, and radiation is a naughty word also. The funny thing of it is, though, that radiation is something you cannot avoid. You get it. You're exposed to it all the time. 40 percent of your radiation in your lifetime is going to come to you in your food. You want to stop eating? So we ban foods that have radiation in them and then die of kidney failure because potassium in the food that we eat is an essential element for life. It's also radioactive. It comes in your well water. You want to stop using well water too, spring water? Can we give up lemons, grapefruit, a lot of things with potassium in it? Well, let's be reasonable about these risks we face in our lifetime. Some of them are very small risks. Some are them are very large risks. Sometimes we're willing to ignore a very large risk just because it pleases us.

One of the larger risks we face in our life here, it takes 40 thousand minds a year, could be solved very easily by abolishing automobiles. Nobody

is going to do it, of course. And there are some very tiny risks in our life and radiation is one of them. But it gets to be a big issue for some people, much like the witches were a big issue at one time, and ghosts and demons, and it's something we have to fear, and it's something we can capitalize on and we express ourselves through this fear.

Well, the simple thing to do, perhaps, to be done is become educated as to how much radioactive material there is around here anyway. You're going to walk on it, live with it and eat it. 20 percent of the radiation you get in your lifetime is going to come from around you. A large part of it is going to come from the building materials in your house, especially if you have a basement. 40 percent is going to come from the food you eat, and you don't want to give that up, and another 40 percent is going to come from the sky, and, of course, you can't go hide from that. So we got to face up to the fact that radiation is a fact of life and only in extreme situations should we be worried about it.

We should not be spending enormous amounts of money to cure little things. We should spend enormous amounts of money for big things. You can save a life for $30 million from radiation if you want to do it,

or spend $300 for a life somewhere else in a foreign country, children that cannot afford inoculations. We don't want to spend $300 on them, do we? We have to be reasonable. In our lifetime we're going to face issues. We should spend our money where we carry the biggest risks, and we should ignore the little risks or put them on a back burner, and radiation is one of the smallest risks in our lives, and we should not be spending an inordinate amount of money trying to solve it.

Two years ago I visited the place where all this uranium came from. It's a place in Utah. It's a small town on the edge of a national monument. I went, walked around the dump which is left over from the uranium mine just outside of town. People there don't seem to be concerned at all about radiation. They shouldn't be. They're getting about 10 times as much as we are anyway. And there's places in Pennsylvania where you get enormous amounts of radiation, and they're not worried about it. There are places in the world where the radiation level is 20 times normal and people are not going to move out of there either. So we ought to get this into a sensible perspective.

MS. KREUSCH: Thank you. Is there anyone

that didn't sign up to comment tonight that has changed their mind and would like to comment? Dr. Dooley?

MR. DOOLEY: David Dooley. I'm Dr. Dave Dooley and I'm with the MJW Corporation, and Ken had asked me to come up and say a few words about the fact that the number that has been used by the Corps to look at their modeling is something that maybe they would like to have you understand in more of a layman's terms.

Typically, when the general public hears the word modeling, their eyes roll back in their head and they say, what model are you using. And one of the things that -- unfortunately, the D.O.E. are the people that designed this model, but it is a good way to assess the materials that you have left on a site after you clean it up, and one of the key elements that you use in developing all your models is try to be as conservative as you can with the perimeters that you pick to determine what dose you have at the end, and this model originally started out as, let's make sure we pick the worst perimeters for someone left living on the site after we clean it up. That is a farmer that has a well that's got his cattle on the site, is growing a large garden, and throw all these

conservative factors in, he's eating everything out of his garden, he's -- he's eating all the farm animals that he grows, everything you can possibly imagine, he throws that into the model.

On this site, it's pretty tough looking at the demographics of Tonawanda to say that you're going to have a situation like that, where you have a farmer with thousands of acres, or even with a few hundred acres, or even with 10 acres, that's going to have farm animals, grow a garden and live completely off the land. It just isn't reasonable. So what is reasonable is where you have a scenario that you have a resident and he has a small little garden and he's eating a certain portion of the vegetables out of that garden, but he doesn't have any well water because the town has municipal service, and the expense of putting in a well and even getting a well that may be productive in this area is pretty hard to come by from a reasonable standpoint. What you have is a guy living on a piece of land on this site after they clean it up, that doesn't have a well, he's living off of regular water that's supplied by the city or by the town, and he's got a little garden, and you assume he's eating 5 or 10 percent of what he grows, a lot he gives to friends, but you focus in on him and say,

what kind of dose is this person going to get at the end, and you're assuming a lot of conservative factors here, and with the industrial scenario, you know, guys going to work, he's going to be there eight hours, so the dose is going to be lower. He's not going to be farming the property, so you're going to get a six millirem dose.

As the Colonel explained, when you have a resident there, the dose is about 21 millirem, and again, this resident is the most conservative resident you could have. Not everybody is going to have a garden, not everybody is going to have a house with a basement. So all these factors tie into a number that is below any federal guidelines that the NRC has promulgated to date. It's in the range of where the E.P.A. wants to be, it's in the range of the TAGM, and as the last speaker pointed out, the reasonable part of living on the face of the earth is we are all exposed to radiation every day of our lives, and like it or not, there's radon out there and, you know, between cosmic rays and what you have on the face of the earth, you're eating about 300 millirem a year, like it or not. You can live in lower radiation areas, you can live in higher radiation areas, but human beings, we wouldn't be here if we weren't able

to deal with natural radiation. If we couldn't deal with it from a genetic point of view, we'd be done. We'd still be, you know, in amorphous mess in a sea someplace, and we'd be a single-celled organisms. That's a critical issue when you talk about taking the standards lower and lower and you talk about protecting people. This is a very, very low number to try and meet, and is it a reasonable number, yes it is, because you want to try and protect the public to the extent, largest extent possible, and with the numbers that I've seen that they have for this cleanup, and the models that we've run, the numbers are reasonable and the cleanup that they've done already with the Ashland 1 site where they have a criteria of 40 picocuries per gram and they cleaned up to 5, and the dose incurred -- as the Colonel said, it's not the uranium that's the driver, it is radium. The key issue is to make sure that the radium stays under 5 because that's where the problem is. When you look at it percentage wise, the radium is 80 percent, 85 percent of the total dose here. Take care of the nuclide, take care of business and we'll keep a safe site, not only now but a thousand years from now. Thank you.

MS. KREUSCH: Is there anyone else that

changed their mind about commenting tonight? Ralph, you have a question?

MR. KRIEGER: Yeah. A couple things I just wanted to point out. Chuck Swanek brought up the standing Fink study, that's the military connection, that's dealing with the Love Canal and it does deal with the Linde Site on there. In that reading, there's two volumes of that, and I think it was put out in 1981. That's an interim study. One of the things we keep hearing about tonight is a number of -- well, what the picocuries are and what this is. I don't hear anybody saying what the cumulative effects are. Cigarette smoke wasn't a problem. The states going to make millions of dollars within the next couple of years to pay back for all the medical expenses that we consumers who didn't smoke had to pay for the people who had cancer from smoking. Let's not make any mistake here. The doctor is absolutely correct. Uranium is a toxic material. One of the most toxic materials outside of Plutonium. That's what we're dealing with here. We're not dealing with the sun, we're not dealing with the air, we're not dealing with the plants and the flowers. We're dealing with material that was unnaturally put there and processed to its highest degree for nuclear

2.12.1

weapons. It was not made to grow flowers. Make no mistake on that. This is a lot of bull around here when they talk about this. This other gentleman got up there, and I understand his position. However, if it's your child, your grandchild, or your mother or your father who got contaminated, however it happened, and they got cancer as a result of this, what would your opinion be? That's all I have to say.

MS. KREUSCH: Thank you. Mr. Finch?

LIEUTENANT COLONEL MARK FEIERSTEIN: I'd Like to put in perspective the millirems from the site and the smoking. From our site industrial commercial usage, 6 millirems a year, smoke two packs a cigarettes a day, 8,000 millirems per year. Just want to put it in perspective. Sir?

MR. KRIEGER: The contaminates from Prax Air, the railroad cars went out to either Arizona, Utah or California. They refused them. Now, can I expect those things to come back here in Tonawanda?

MS. BARCZAK: Nothing has been refused, sir.

MR. KRIEGER: It hasn't?

MS. BARCZAK: Nothing has been refused. Nothing has been sent back.

LIEUTENANT COLONEL MARK FEIERSTEIN: The

remnants from Building 30 went to California, and much to do was made about that, and I have to put that in perspective for you some. California Regulatory Agency, if you remember the name --

MS. BARCZAK: I believe it's the Department of Radiation or Health and Safety.

LIEUTENANT COLONEL MARK FEIERSTEIN: -- went out to the site where this material was and did a radiological survey and found no levels higher than a background level.

MR. KRIEGER: Thank you.

MS. KREUSCH: Mr. Finch?

MR. FINCH: I'd like to clarify several things, especially this point right here. Right in front of me is a copy of what came out by the Associated Press, they're not saying that the material from Building 30 is too high in radioactivity. What we are -- they're arguing out at the California end is, wait a minute, we accept material higher than radioactivity but it has to be from natural sources. The Building 30 debris is not natural sources, and that's where the whole battle started. That's according to contacts I have throughout the west.

Another point. I respect Mr. Lee, but I've got about 200 plus people that would like to sit down

and talk to him about getting cancer. Those are the workers. Unfortunately, they're all dead, so I'm afraid they won't have a chance to discuss this with Mr. Lee. I'm not joking people. Long-term exposure to low level radioactive waste, the cancer cases are still blossoming among the Linde workers, the factory workers; one a month, Ralph, sometimes two, so the facts are there. The facts are there. Thank you.

MR. CALABRESE: As Legislator Swanek said, we've been at this a long time and folks, let's not lose the big picture here. We can show tremendous progress, even go so far as to say we can claim victory. Material is leaving this town. That never happened before. It's gone. We've got a plan to clean up even more sites. It's leaving. We've got a major site along the waterfront that we agreed to clean up to 15 picocuries that actually got cleaned up to 5. We are meeting or exceeding all of the state or federal standards. I can't remake the standards. Nobody in this room is going to remake the standards anytime in the reasonable future. Let's not make the best the enemy of the good. We are cleaning our land up. We are meeting residential standards. That didn't happen before. We all agreed at one point that 60 picocuries would be acceptable for Prax Air. We're

now going to clean up to 51, and who knows, by the time they finish it may be even lower. So let's concentrate on the big picture here. This is progress. There are communities all over the country that are still arguing with the federal government to remove their material. They would change places with us in an instant to be waiving good-bye to the trains out to Utah and California, because they've not been able to make the progress we've made. We've made the progress because of this organization called CANiT. A bipartisan effort to speak for the community with one voice, and we've done that for 11 years. That's unheard of in this country, and politics in this area is pretty tough, it's not noted for cooperation, and this CANiT is an exception. Because of it we have seen Ashland 1 cleaned up, we are about to witness Ashland 2 cleaned up, we are seeing the cleanup of Prax Air. I don't know about you folks, but from where I come from, that is progress, and the job is being done, and let's not delve into the minutia here to the point where we ignore and overlook those trains leaving filled with radioactive dirt and the Town of Tonawanda reclaiming hundreds of acres of very available land along the waterfront and cleaning up a very important industrial site. So, please, let's

keep this in perspective.

MS. KREUSCH: Ralph?

MR. KRIEGER: Just one more. The doctor brought up studies. Dr. Thomas Mancuso, federal employee, and Alice Stewart did a study and they released it, I think, in 1964, on 225,000 nuclear workers. When Dr. Stewart released that -- Dr. Mancuso released that study it was immediately seized by the federal government and he was fired, and today I do not think we can get that study. I think it's still under lock and key. So do you trust your government? Trust what's verified as we know with the golf war syndrome.

MS. KREUSCH: Mr. Swanek?

MR. SWANEK: I just want to leave a couple of thoughts. Sometimes these things just get out of control as far as where we're going here. I have lived in the Town of Tonawanda and Kenmore all of my life, and my parents have lived here almost 60 years. My parents remember when the nuclear material was being built for the bomb that ended the war. Almost 60 years ago they did this work here, and 60 years ago nobody knew about the radioactive contamination that they know about today, but our community participated in something that was of a national importance to our

people and to our nation. 60 years later the material is still here. The only thing that's different is that it's getting cleaned up. I can't change what happened 60 years ago. I can't change things for the people who died. I can't change what happened at Prax Air. The only thing that I can change, that Carl can change, that Ken can change, and what we want in this community is to get this material out of here, and if we can meet a standard of a -- residential standard based on regulations that are much more stringent than they were back in the 30's and 40's, then we're following the best procedure we can. We can fight about this till we die, but when that material's on a train and it's going out to a nuclear depository that's been secured and guaranteed to hold this material, I think we're getting something done. And so my vote on this issue is very simple. I deal with right now. I deal with how much money and how hard we fought to get the money for the cleanup and the standard for the cleanup, and I believe, as all of us believe who have worked on this thing for 11 years, who live in this community and have a stake in what goes on here, that we are moving in the right direction.

I got to tell you something, folks. I just

am tired of all of these innuendoes that are brought up about what happened back then and what's going on and all of these other things. If you sat at those meetings for 11 years -- and I've grown old over this issue, I am tired of the rhetoric. We're going to get this thing cleaned up and we're going to get this material out of here and we're going to do it now and that's it, folks. And if you really don't trust us, and you really don't like us, then you can get rid of us as elected officials, but my epitaph and Carl's and the rest of us is to get it out of here until it's safe. And I'm sorry I'm getting aggravated, but I've been on this train too many times. We have to get on with it so I don't have to talk to you folks about it 5 or 10 years from now when you want to live in this community. These guys are the only ones getting it out, and they're getting it out safely and meeting every guideline that we know of. That's it, folks.

LIEUTENANT COLONEL MARK FEIERSTEIN: There are no secret files. I invite any of you to come to the district, we'll walk through, we'll pull open drawers and you can see what we do. So far we've gotten 45,500 cubic yards of this out of here, and that went to a site in Utah. Did someone challenge it? Yes, they challenged it, and the result, they

lost, and it's there and it's staying there, and we want to continue to get the stuff out of there and we'll continue to make progress.

MS. HANOBECK: Did you say there was enough money to clean up the area without Building 14, and will that be passed on to the taxpayers?

MR. SWANEK: Ma'am, this is our intention. Our intention is to move this out. This Building 14 is an issue between Prax Air and the Army Corps of Engineers. The CANiT recommendation is that that material be removed and this building be cleansed so that we are done with this issue when they leave this area, and the FUSRAP is closed out. There isn't anything left. Prax Air is working on that right now, and that's why when we met we asked for an extension of the time frame, to give Prax Air the time to go in to their company and figure out a way on how to get that equipment out of there so that these guys can go in and do what they need to do, and the Army Corps, basically, has said, we are prepared to fund whatever we need to do at Building 14, and I say, when the anvil is hot, strike, and that's the only issue left at this moment, and it needs to get resolved, and they know it, and we're on their backs to get it done.

MS. KREUSCH: Mr. Lee wanted to say

something.

MR. LEE: I'd like to answer a question about the amount of uranium in the soil. There's about four parts per million, on the average, and some places in the world it's much, much higher than that. It gets up to about 5,000 parts per million, they'll mine it, and that's approximately what it is in some pockets out in Utah. Now, is that going to scare any of you from visiting a national arch, a natural monument? That's right on top of that mine. Now, there are a lot of poisonous things in the ground. You can easily avoid it by not eating. They're insoluble, and your digestive system wouldn't take them up. An amount of uranium in a cubic yard of a dirt is about a penny. For people that are afraid of radioactivity, why don't you move, it might be cheaper to pay the moving expenses. I understand there's very little radioactivity at the North Pole or Antarctica.

MS. KREUSCH: Thank you. In the back. Gentlemen, do you have a question?

MR. RODENMOCKER: Kenneth Rodenmocker, and I've attended several meetings and never once have I heard anything about Two Mile Creek and the cleanup of that. What is the status on Two Mile Creek?

LIEUTENANT COLONEL MARK FEIERSTEIN: Sir, we

2.10.1

know of no issues with Two Mile Creek.

MR. RODENMOCKER: It was a dumping ground for Linde.

MR. HALLAM: Chris Hallam, health physicist with the Corps. To my knowledge we don't have any current data that indicates cleanup of Two Mile Creek is necessary.

MR. RODENMOCKER: Has it been checked?

MR. HALLAM: Yes, it has. It was checked in the early '90's, I believe, by Bechtel, or the D.O.E. Bechtel was the prime contractor for D.O.E. at the time and they did extensive sampling down the entire length of Two Mile Creek. The data they produced from that study indicated there was no cleanup warranted.

MR. RODENMOCKER: Again, I repeat, it does not freeze in the wintertime and it is not a fast flowing creek.

MR. HALLAM: I sincerely doubt that's due to radiation. Radiation itself, in the kind of concentrations we're talking about, wouldn't produce the kind of heat that I think you're indicating that would keep a creek from freezing. Also, there are a lot of other reasons why a creek may not freeze, and I think that would be a large jump to indicate that would be why it doesn't freeze.

MR. KRIEGER: To answer that gentleman's question. A couple of years ago, when we were at a D.O.E. meeting dealing with Two Mile Creek, it was brought up then, and at the one meeting the same answer was here that you just gave, then at a -- three months later somebody else who wasn't there again raised a question about Two Mile Creek, and Ron Kirk, the engineer in charge, said they did find something on Two Mile Creek, and that's the last we ever heard of it.

LIEUTENANT COLONEL MARK FEIERSTEIN: Sir, did the D.O.E. invite you to come to their office and go over all their documents?

MR. KRIEGER: It was at a public meeting. This wasn't me. It was in answer to a public question.

LIEUTENANT COLONEL MARK FEIERSTEIN: What I'm saying, if someone has concerns about that, come to the district and we'll take out all the paperwork.

MR. KRIEGER: One more point I'd like to make that my friends from CANiT brought up. You're absolutely right, I'll agree with that gentleman up there, radiation is not a problem. Is not a problem. It's in our food, it's in our sun, it's all over the earth. Then why are we bothering to clean it up?

Simple question. That's what I want an answer to. Why are we bothering to clean it up? Why are we spending over $60 million on Prax Air alone on a nonprofit? Let's figure that out. Let's spend $60 million and bring some jobs here and some industry here. Why are we spending $60 million? Answer that question. Simple. That's a simple question, sir. Simple.

LIEUTENANT COLONEL MARK FEIERSTEIN: To give you a simple answer.

MR. KRIEGER: If the radiation and the nuclear contamination on these sites throughout the whole Western New York area, not just talking Tonawanda, West Valley and the rest of them, Colony, if it's not a problem, then why are we spending the taxpayers money to clean it up?

LIEUTENANT COLONEL MARK FEIERSTEIN: Sir, I don't want to --

MR. KRIEGER: I've got a real problem with that, Colonel.

LIEUTENANT COLONEL MARK FEIERSTEIN: Let me just say that the levels that exist out there now exceed federal and applicable guidelines. We're getting them down to reasonable levels. Right now they're not -- I'll tell you what. If we were to

calculate the additional cancer risk from what's out there now, I'm not sure that it would be -- I'm not sure it would be anything that would be very, very high or terrifying. I'm having a problem trying to put that in the exact words, but it is in excess of guidelines. We're trying to get it down to an acceptable level, and what we're shooting for, again, is that dosage of six millirems a year.

MR. KRIEGER: But it's not a problem.

MR. CALABRESE: We are cleaning this material up for one very simple reason. We cannot stop the sun from shining, we cannot remove the bedrock of the earth that also produces radiation, but this material does not belong here. It was put here artificially as part of a national effort to produce a weapon that ended a war, and it simply does not belong in this town, and that has been our position from the very, the very first day. It's not ours, it doesn't belong in an area of this population, of this proximity to a river, of this type of climate in terms of rainfall, and it's not ours, therefore, get it out.

You and I can't do anything about the natural radiation, but we can do something about the unnatural radiation, which this material represents. It's a very easy question to answer. It does not belong

here. It was not meant to be here ever and it's going. That's good news, Ralph. I know there are people in this country that don't like to hear good news. A couple years ago John Stossel on ABC News did a great two-hour segment called, "Why Are We Scaring Ourselves To Death". I firmly believe there's people that don't like good news, who like to scare themselves about every potential news in the world.

Folks, for all the bad news we hear, the air we breath, the water we drink, what's happening to life expectancies in this country? Over the last 30, 40 years, what has happened to the average life expectancy of the average man and average woman in this country? It's gone up. We're living longer than ever. In fact, you know what the largest growing segment of our population is? People over 85. Now, in Russia it's the opposite. The life expectancy has been going down. We're leading longer and healthier lives to the point where our biggest problem is how are we going to take care of the people over 85. It's leaving. We're continuing to work on the problem until all the sites are cleaned up. I will be able to rest comfortably. I live in this community. I have three children. I plan to live in this community all my life. I think we're doing our job, and when it's

all said and done, I'll be able to sleep at night and say we got rid of it.

MR. KRIEGER: Congratulations on the Russian thing. That wouldn't happen to have anything to do with Chernobyl, would it?

MR. CALABRESE: No. The average life expectancy of the Russians was going down way before that.

MS. BAZINAT: Ann Bazinat, B-A-Z-I-N-A-T, and I've lived in this community my entire life, not just in this neighborhood, but in the same house. My father was a chemical engineer at Union Carbide Linde Division for many years beginning in the 1950's while a student at Erie Tech. The house my family lives in was built by my parents in 1961. My father was an intelligent, knowledgeable individual, as his co-workers can attest to, and I know if he ever felt he were endangering our health by having us live near the Linde facility he would have relocated us in a second.

I personally worked in the environmental lab industry. I've spoken with acquaintances at government agencies and even a certified safety professional regarding the Linde Site, my homes proximity to the site and possible health risks. I

trust the opinions of these professional and have decided to support the proposed plans with its current cleanup levels and institutional controls. In the perfect world we would have all the background levels brought down. This is not possible. Contamination on a daily basis for extended periods -- I am saying that I believe as much of the material as possible should be removed to bring the contamination levels down to acceptable levels as prescribed by government regulation. I also believe that should these acceptable levels be adjusted downward in the future by the government, additional work may need to be done to comply with the modified regulations.

People have spoken about health issues and how they feel that they may be related to the materials and biproduct made during the early 40's at this site and that these materials may be making their way into our neighborhood. I've looked at different reports issued over the years. An interesting report is the base risk assessment report. Nothing that I have seen leads me to be concerned that dangerous materials have migrated from the site to our basements or our yards. If people are concerned about their levels, different government agencies have programs for radon testing in your home, for eight bucks you

can buy a radon test kit and maybe give yourself a piece of mind. I'm currently doing that, but I'm doing it because I'm afraid of the naturally occurring radon, not radon that has come from the site. Thank you.

MS. KREUSCH: Thank you.

LIEUTENANT COLONEL MARK FEIERSTEIN: Okay. That concludes the formal portion of this. We will remain afterwards for as long as you'd like us to for informal questions and answers.

C E R T I F I C A T I O N

I, CHERILYNN M. PARENT, do hereby certify that the forgoing transcript is a true, complete and accurate transcription of my stenotype notes, done under my supervision, and done to the best of my ability.

I further certify that I am in no way related to any of the parties and have no interest in the outcome of said cause.

I HAVE HEREUNTO SET MY HAND, this 9th day of June 1999.

Cherilynn M. Parent

ATTACHMENT 3

GEORGE M. MELROSE COMMENTS
April 7, 1999

2919 Delaware Avenue • Kenmore, New York 14217 • (716) 877-8800

Town of Tonawanda

Commission for
Conservation of the Environment

GEORGE B. MELROSE
Chairman

April 7, 1999

Major Kaly M. Eastman
Acting Commander
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 142074207-3199

Re: Proposed Remedial Action Plan for the Linde Site

Gentlemen:

The Environment Commission of the Town of Tonawanda has been actively involved with the remediation of the Tonawanda FUSRAP site for over twenty years. We are pleased with the actions taken by the Corps since its assignment of remediation responsibility. The professionalism, clarity of action, public involvement, accountability and speed of your activities has been commendable. We are particularly encouraged that the Ashland II site is nearing closure and that plans are underway for Linde, Ashland I and, soon we hope, for Seaway.

We have a primary concern regarding the proposed plan for Linde (Praxair) site. Original studies proposed a cleanup criteria of 60 pico curies/gm for uranium and it is our understanding that both building 14 and the soil pile were remediated to that level under Army jurisdiction. The proposed plan now offers a level of 600 pc/gm, a ten-fold increase. We have seen no rationale for such an increase.

We believe that the site should be remediated to a level which will permit performance of the designated uses for the site to be carried out within acceptable standards for health and safety. We, therefore, question the acceptability of the 600 level.

These comments per resolution passed at the March 30, 1999 meeting of the Commission.

Please continue to keep us informed of activities on the Tonawanda FUSRAP site properties.

Very truly yours,

George B. Melrose
Chairman

GBM/sc

c.c. Supervisor Carl Calabrese
Councilman Jeanne Bartlo
Councilman Raymond Sinclair
Richard Tobe
Paul Krantz
Thomas M. Dugan
Environment Commission

ATTACHMENT 4

DENNIS A. CONROY COMMENTS
April 16, 1999

PRAXAIR

Praxair, Inc.
Post Office Box 44
Tonawanda, NY 14150-7891
Tel (716) 879-2000

April 16, 1999

U.S. Army Corp of Engineers
1776 Niagara St.
Buffalo, New York 14207

Attn: Mr. Ray Pilon

Re: Comments on Proposed Plan for the FUSRAP Former Linde Site

Dear Mr. Pilon:

We have reviewed the document you sent titled "Proposed Plan for the Linde Site Tonawanda, New York," dated March 1999 and are providing the following comments in response.

We have maintained a cooperative relationship to the various agencies and contractors involved in the clean up efforts that were first introduced back in 1988, by the US Dept. of Energy. During all of these discussions over the years, the intent of the clean up was to leave this site with no radiological restrictions. That made sense as we had radiological controls in place since the DOE indicated a need for them back around the late 1970's, until such time in the future when remediation would be performed by the government. The facility was described as "radiological safe" at that time with the work restriction controls that were in place. The major concern however was that in the future, no one could predict what could become of the site and therefore it should be cleaned to a level that would eliminate the need for any controls or restrictions.

4.1 During all of the discussions with the DOE along with presentations made to us, the clean-up criteria was established at 60 pico curies per gram for uranium. This criteria was continued with the clean-up activities of the soil pile and sub-surface materials in building 14 that was managed by the USACE. Earlier documents issued by the USACE have stated that the cleanup guideline for the Tonawanda site for total uranium is 60 pico curies per gram. This level would allow for a margin of safety to ensure we would be under the dose estimate of 10 mrem/yr for most reasonable scenarios and would require no radiological restrictions. It would also provide a margin of safety, if workers were to perform work activity in the soils. As you are aware this is a constant changing facility, with the potential for new construction in areas that currently are contaminated. 4.2

Mr. Ray Pilon
Page 2.

Additionally, we requested our consultant, Dr. David Dooley to review and comment on our behalf, the USACE, Technical Memorandum: Linde Site Radiological Assessment, Draft, January 1999. As well as the proposed plan. His comments, which are attached, reflect our concerns as well.

Based on the above, we are demanding that the clean-up criteria for our Linde site be returned to 60 pico curies per gram for uranium. Furthermore, we have sought the assistance of the Coalition Against Nuclear (materials) in Tonawanda to escalate this demand.

Dennis A. Conroy
Site Manager

MJW
Radiological and Health Physics Consulting Services

March 2, 1999

Mr. Tom Dugan
Manager, Health Safety & Environmental
Praxair, Inc.
175 East Park Drive
Tonawanda, NY 14150-7891

Subject: Comments on Listed Reference Documents

Reference: 1) USACE, Technical Memorandum: Linde Site Radiological Assessment, Draft, January, 1999
2) USACE, Proposed Plan for the Linde Site – Tonwanda, New York, Draft, February 12, 1999

Dear Mr. Dugan:

Per your request, a review of the listed reference documents has been performed. My specific comment for reference 1 is as follows:

4.3
- In general this document has been written to present a "Chinese menu" of risk-based and dose-based clean-up goals. To date, radiological clean up at the Linde site has been based on a total uranium site-specific standard of 60 pCi/g using DOE Order 5400.5 generic guidance. (See Draft Post-Remedial Action Report for Building 14 at the Linde Site, USACE/OR-416, Volume 1, November 1998). A clean-up level of 60 pCi/g equates to a risk of about 1E-06 which is at the lower end of the CERCLA risk range and is therefore acceptable under CERCLA guidance and succeeds in limiting future lifetime excess cancer risk to the maximum extent possible. Another added feature of this clean-up level is that no addition barriers such as additional ground cover are needed to meet the 1E-06 risk level.

4.4
- The authors of this document seem to be at odds in trying to decide whether to use a risk-based or a dose-based approach. Both possibilities are left open without regard to historical precedence to the clean-up work performed to date at the site. For example, they cite an EPA document OSWER Directive 9200.4-18 which "indicated that a lifetime excess cancer risk of 3E-04 is protective". Calculations for the residual concentrations for the two exposure scenarios considered in section 3 shows the residual concentrations to be 19,000 and 100,000 pCi/g total uranium, respectively corresponding to a 3E-4 risk level. From a dose-based perspective 19,000 pCi/g and 100,000 pCi/g equate to 300 mrem/yr and 575 mrem/yr for the two scenarios considered, respectively. These concentrations may be considered protective under

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Phone (716) 631-8291 Fax (716) 631-5631

EPA risk-based guidance but they are completely out of line with NRC and DOE (100 mrem/yr), EPA (25 mrem/yr) and NYSDEC (10 mrem/yr) dose-based guidance values.

- Section 3.2.1 states that "If a dose limit is established at the site a sum-of-the-fractions approach must be used to assure that the total dose from exposure to all radionuclides is below the specified limits (s)". The NYSDEC TAGM 4003 has established a dose-based limit of 10 mrem for the site. If 600 pCi/g total uranium were used as a clean-up value, this equates to an annual dose of approximately 9.5 mrem. Under the sum-of-the-fractions rule for a dose-based limit of 10 mrem, all other constituent nuclides of concern, namely Ra-226, Th-230 and Th-232 collectively could not exceed 0.5 mrem. In realistic terms this would be extremely difficult to meet because 0.5 mrem would equate to concentrations within a few percent of the normal background levels. Therefore, these constituents would have to be at or below measured background for the clean-up to proceed. At 60 pCi/g total uranium sufficient leeway exists such that the other constituents could contribute to the total dose yet the 10 mrem/yr criterion would still be met. The sum-of-the-fractions rule for the site would be based on the data provided in Table 3-3 of reference 1 as follows with the U total residual concentration modified to 60 pCi/g:

$$\frac{[Ra-226]^{*}-BKG}{5.7}+\frac{[Th-330]-BKG}{16}+\frac{[Th-232]-BKG}{3.9}+\frac{[U\ total]-BKG}{60}\leq 1$$

*[Ra-226] refers to the measured concentration of Ra-226. The site background concentration "BKG" is subtracted from this value before being divided by the nuclide concentration for 10 mrem for the remaining nuclides. Total uranium at 60 pCi/g would add about 1 mrem to the annual dose.

- On page 9 in the "Conclusions" section it is not certain what purpose is served by relating the uranium chemical toxicity when it is 70 times higher than the existing dose-based clean-up limit of 60 pCi/g.

My comments on reference 2 are as follows:

- USACE proposes that Alternative 4, Excavation, Decontamination and Institutional Controls be adopted as the final remedial action for the Linde Site. The proposed plan does discuss the prior activity at the site but it carefully omits discussion of the guidelines used for these previous actions.

- In §2.1 the injection wells are discussed. I concur with the assessment made that no remediation is required for this waste.

4.5 4.6 4.7 4.2

March 2, 1999

—4.9—

- §3, 1st ¶, acronym "BRA" not defined nor previously defined in preceding text. First occurrence of use should be written out as "Baseline Risk Assessment (BRA)". Similarly, the "National Contingency Plan (NCP) is not defined upon first use.

—4.10—

- §3.1, 2nd ¶ discusses the Reasonable Maximum Exposure (RME) scenario be applied to the risk estimates. It is not apparent in §2.2 of reference 1 that RME scenario's are used since there is no mention of this in that section or any other section of the document.

—4.11—

- §4 on ARARs does not address the historical aspects of the site clean-up and its relation to the new proposed clean-up criteria. How is 40 CFR 192, a regulation adopted in the early 1980's, more responsive to site clean-up needs than DOE Orders specifically written to address FUSRAP remedial actions such as DOE Order 5400.5? Also why isn't the NYSDEC TAGM 4003 considered in this section?

—4.12—

- As in reference 1 the author refers to the previous clean-up action and clean-up criteria used to date at the Linde site but they are very careful so as not to state the actual number.

In summary, reference 1 appears to be an attempt to justify a higher clean-up level through several comparisons of concentrations of total uranium using both dose-based and risk-based approaches which from a uranium residual concentration are at odds. The risk-based approach total U concentrations far exceed those of the dose-based approach and therefore make a dose-based approach of 10 mrem/yr (at 629 pCi/U) seem almost innocuous. However, neither reference 1 nor reference 2 discusses that the soil level of 60 pCi/g total uranium was used for the previous site work.

Should you have any questions please contact me at your convenience.

Very truly yours,

MJW Corporation Inc.

David A. Dooley, Ph.D., CHP
President

DAD:lcc

98-174.010

ATTACHMENT 5

RICHARD M. TOBE COMMENTS
April 20, 1999

County of Erie

DENNIS T. GORSKI
COUNTY EXECUTIVE

PHONE: 716-858-8800

April 20, 1999

LTC Mark D. Feierstein
District Engineer and Commander
US Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Dear Colonel Feierstein: Mark

I am writing on behalf of CANiT to officially request a postponement of the public hearing scheduled for April 22, 1999 on the *Proposed Plan for the FUSRAP Former Linde Site* and an extension for an additional thirty days for the public comment period.

As you know, the Proposed Plan For the Linde Site was released on March 28, 1999. The public hearing has been scheduled for 18 work days later, with the close of comments occurring 3 work days thereafter. During the comment period, the Easter and Passover holidays occurred and the US Congress, the Erie County Legislature and the New York State Legislature were in recess, and a number of CANiT members were unavailable to meet to discuss these very important issues.

As you also know, the contract with MJW, CANiT's technical consultant expired on April 1, three days after the release of the Proposed Plan. As a result, MJW has not been able to undertake a review and to issue a report to CANiT on the technical aspects of the Proposed Plan. As the Plan raises a number of very troubling issues, the inability of CANiT to officially and fully consult with its advisors has made it virtually impossible to prepare complete comments. We understand from a telephone call today from your staff that MJW has been reinstated as of today. We look forward to confirmation of this in writing.

53-52

Finally, we are very concerned with the standards proposed to be used for this action and the methods proposed to be employed to insure a proper remediation. Our concerns go to the very heart of the proposed plan. We question whether the clean up standards are sufficient to protect public health and the environment and whether our goal of unrestricted use of the land consistent with the Town of Tonawanda's master plan can be achieved. These concerns are of such a magnitude that we believe more time must be provided. The consequences of an incorrect decision are so significant that time spent now very well could avoid long and costly delays in the future.

We look forward to your response.

Very truly yours,

RICHARD M. TOBE
Chair, CANiT

RMT:lt

ATTACHMENT 6

JOHN J. LaFALCE COMMENTS
April 22, 1999

JOHN J. LaFALCE
29TH DISTRICT, NEW YORK

2310 RAYBURN BUILDING
WASHINGTON, DC 20515-3229

www.house.gov/lafalce

Congress of the United States
House of Representatives
Washington, DC 20515-3229

April 22, 1999

Lt. Col. Mark D. Feierstein
U.S.Army Commanding
Department of the Army
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Lt. Col. Feierstein:

6.1 I am in receipt of the *Proposed Plan for Remedial Action at the former Linde Site*. While I have not had enough time to discuss the full range of implications that would result from the implementation of this proposed plan with CANiT's technical consultant, I do have grave immediate concerns about the proposed remedial action criteria of 600 pCi/g of Uranium-238. I am deeply disturbed by the prospect of increasing the criteria from the agreed upon 60pCi/g which is currently being used for remedial activities.

As you know, my number one concern throughout this multi-stage FUSRAP program has been the absolute protection of the health and safety of the residents and the environment. I insist that NO action be taken that compromises the public health.

6.2 I want assurance from the U.S. Army Corps of Engineers that any proposed remedial action plan meet with full consensus of the areas stakeholders. We have labored long and hard to achieve agreement by all parties, regarding Tonawanda FUSRAP remediation and any future cleanup activities should follow the same rigorous consensus building. The employees of Praxair, the residents of Tonawanda and future generations deserve nothing less.

6.3 Thank you for agreeing to my request for an extension of the public comment period. I look forward to a response to my concerns.

Sincerely,

John J. LaFalce

JOHN J. LaFALCE
Member of Congress

ATTACHMENT 7

MR. & MRS. RAYMOND CHAPMAN COMMENTS
April 28, 1999

[redacted] rec.
APR 28 1999

US Army Corps of Engineers.

COMMENTS
Proposed Plan for the Linde Site

Written comments will be accepted if postmarked by May 27, 1999

We have lived at 844 Riverview Blvd for 40 yrs. Raymond Chapman my husband & have both had cancer.

We are concerned of the leaching of the Uranium into our soil as well as air borne particles gardens etc.

Our children played near the lake that was filled in. Why was they covering up something in the lake?

Our daughter said, she seen deformed and death fish in the lake.

Isn't this also a health hazard for childen attending Homes School??

It would be a good idea if they would purchase homes in the neighborhood near this Linde Site for health reasons

Why was there given permission to build near such a hazardous location???

Money Money?? Another "Love Canal"

How about testing our soil near our homes??

If you would like to receive a copy of the Responsiveness Summary when the Record of Decision is reached, or would like to be added to our mailing list, please fill in your: **Name:** Mr & Mrs Raymond E. Chapman
Address: 844 Riverview Blvd
Tonawanda N.Y
14150-7828

Responsiveness Summary? Yes ✓ Mailing List? Yes ✓

ATTACHMENT 8

PAUL J. MERGES COMMENTS
April 30, 1999

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Radiation & Hazardous Materials
50 Wolf Road, Albany, New York 12233-7255
518-457-9253 FAX 518-457-9240

John P. Cahill
Commissioner

99 MAY -5 PM 12:14
FUSRAP

Major Kally L. Eastman
Acting Commander
U.S. Army Engineering District, Buffalo District
1776 Niagara Street
Buffalo, New York 14207-3199

APR 30 1999

Dear Major Eastman:

Re: Proposed Plan for the Linde Site, Tonawanda, New York (March, 1999)

The New York State Department of Environmental Conservation has reviewed the United States Army Corps of Engineers' (USACE) Proposed Plan for the Linde Site, Tonawanda, New York.

Pursuant to CERCLA, the Atomic Energy Act, and the New York State Environmental Conservation Law, we do not concur with the proposed plan as currently written. The major problems include the following: the proposed uranium cleanup criterion of 600 pCi/g is unacceptable; the Corps has not demonstrated that the 15 pCi/g radium-226 criterion is justified; the proposed plan does not include the use of an Independent Verification Contractor; and the methods the Corps plans to use to determine compliance with the cleanup criteria are not defined. Our specific comments are enclosed.

If you have any questions or need further information, please contact John Mitchell of this Bureau at (518) 457-2225.

Sincerely,

Paul J. Merges

Paul J. Merges, Ph.D.
Director, Bureau of Radiation& Hazardous Site Mgt.
Division of Solid & Hazardous Materials

cc: Lt. Col. M. Feierstein, USACE
D. White, USNRC
S. Page, US EPA
R. Aldrich, NYSDOL
K. Rimawi, NYSDOH
D. Conroy, Praxair, Inc.
P. Kranz, Erie County

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Radiation & Hazardous Site Management

Comments on the
Proposed Plan for the Linde Site, Tonawanda, New York (March 1999)

April 30, 1999

Cleanup Criteria

1. This Department's *Cleanup Guideline for Soils Contaminated with Radioactive Materials*, Division of Solid & Hazardous Materials Technical Administrative Guidance Memorandum 4003 ("TAGM 4003") should be in the category of "To Be Considered" when setting cleanup criteria for sites in New York State. It is one of the documents by which this Department judges the adequacy of proposed cleanup criteria.

2 One principle of TAGM 4003 is that radiation doses are to be assessed under, "reasonable scenarios for current and plausible future uses of the land." We agree with the Corps that the reasonable scenario for current use of the Linde site is industrial or commercial, but we cannot agree that industrial is the only plausible use of the land in the future. As we stated in our March 10, 1999 letter to Mr. Raymond Pylon on the *Draft Technical Memorandum Linde Site Radiological Assessment, Tonawanda, New York*, we do not agree with the proposed future use of the Linde Site as discussed in that document, or in the proposed plan. The fact that the site has been industrial for the past 60 years does not assure that it will not be put to residential use sometime in the future. Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a reasonable maximum exposure scenario should be assumed and cleanup goals set accordingly to ensure protectiveness, using best professional judgement. We believe that future uses of this property over the next 1,000 years could easily be of the residential nature (DOE had conservatively assumed a resident subsistent farmer scenario). Therefore, the USACE should model and discuss this scenario. Otherwise, it is difficult to conclude that the proposed alternative will meet the long-term effectiveness criterion of 40 CFR 300.430(e)(()(iii)(C).

3. This Department questions why the USACE decided to perform another radiological risk assessment at all, since the United States Department of Energy (DOE) had already performed one, which established a uranium cleanup level of 60 picocuries per gram (pCi/g). That criterion met two important objectives, doses calculated under the residential scenario (conservatively modeled as the resident farmer scenario) and the application of the ALARA (As Low As Reasonably Achievable) principle. All of the soil remedial efforts at the Linde Site performed to date have been undertaken to meet this

cleanup criterion. The Corps has not provided a justification for decontaminating the rest of the site to a less protective standard.

8.4 4. The proposed plan includes a cleanup criterion for total uranium (natural uranium) of 600 pCi/g, which is about 286 pCi/g of U-238, 301 pCi/g of U-234, and 13 pCi/g of U-235. Uranium and thorium in concentrations greater than 0.05% by weight are subject to licensing under the federal Atomic Energy Act, 10 CFR 40, and Agreement State laws and regulations. For U-238, a concentration of 0.05% by weight is approximately equal to an activity concentration of 167 pCi/g. We cannot agree to a cleanup criterion that could theoretically result in leaving on site radioactive material that would require a radioactive materials license. Such a cleanup criterion is not consistant with the goals of FUSRAP, nor is it acceptable to this Department. While the US Nuclear Regulatory Commission is currently declining to regulate the 11(e)2 by-product material on this site, to our knowledge, it has not yet exempted any source material that the Corps may leave behind for the landowner to possess.

8.5 5. This Department would like to point out to the USACE that a cleanup criterion is not a below regulatory concern level. Licensed radioactive material is always licensed material unless it is disposed of under the radioactive materials laws and regulations. We are unaware of any USACE regulation authorizing licensed radioactive material to be disposed of without consideration of its licensed status. While the Linde wastes are not under a radioactive material license, the "substantive requirements" provision of CERCLA would impose similar constraints. For example, this Department might not approve soils contaminated with hazardous components and containing radionuclides below a cleanup criterion being disposed of at a RCRA C disposal facility in New York State. This fact is important to all parties involved in cleanups which result in higher than background levels of residual radioactive materials remaining onsite.

8.6 6. The preferred alternative presented in the proposed plan includes meeting the radium-226 standards in Subpart B of 40 CFR Part 192(i.e., 5 pCi/g in the top 15 cm of soil and 15 pCi/g in any 15-cm layer below the top 15 cm). However, the proposed plan does not demonstrate that the 15 pCi/g criterion is appropriate. On February 12, 1998, the US Environmental Protection Agency issued directive No. 9200.4-25, *Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA sites*. In that document, the EPA states,

> If the contaminants at a site are the same (i.e., radium-226, radium-228, and/or thorium) and the distribution of contamination is similar to that existing at Title I sites as described in 40 CFR Part 192 (i.e., little subsurface contamination from 5 to 30 pCi/g), then the 15 pCi/g standard is a potentially relevant and appropriate requirement for the site. . . . If the radioactive contamination at the site is unlike that at the uranium mill tailings sites regulated

under 40 CFR 192, in that significant subsurface contamination exists at a level between 5 pCi/g to 30 pCi/g, the use of the 15 pCi/g standard is not generally appropriate.

Before the Corps concludes that the 15 pCi/g criterion is appropriate at the Linde site, it should revise the Proposed Plan to address the EPA directive and to demonstrate that the conditions described in the directive are met at that site.

Groundwater Impacts

7. In our March 10, 1999 letter to Mr. Pylon, we informed the USACE that we would like additional time to review the information presented on the impacts of the deep well injections. In the interim, our geologist has reviewed the data. At this time we do not agree with the conclusion that " . . . groundwater at the Linde Site does not require remediation," as expressed in the last paragraph of section 2.1, *Description of the Impacted Property*, on page 6. We recommend that a limited extension of the monitoring within the contact zone aquifer be performed which would be designed (1) to provide a reasonable definition on the extent of the zone of disposal and the zone of contamination and (2) to characterize the nature of contamination within these two zones. Despite the statements made in the reports that the levels of contamination seen to date, and the levels of activity in the injected wastewater itself, were consistently below regulatory standards, given the tremendous volume of material injected we need to be vigilant to insure that there are not some areas that contain unexpectedly high levels of activity.

Institutional Control

8. This Department would like to see documentation that the United States Department of Energy (DOE) has concurred with the proposed cleanup level and the use of institutional control for this site. Since the USACE turns over to the DOE the responsibility for long term monitoring two years after the completion of brown fielded sites cleanup, we would like to make sure DOE agrees with this approach and recognizes its future obligation. When exposure controls are used, restrictions by USACE, and later DOE, should be employed to ensure that the controls remain in place, that they remain protective, and that they are effective in preventing exposure for as long as the radionuclides present at the site remain hazardous. Since the Linde site radionuclides have very long half-lives, DOE's acceptance of this role and potential liability should be obtained and documentation of it provided to us.

9. In addition, the plan should state how institutional controls will be applied. Specifically, will the USACE require Praxair, Inc. to place a deed notation or deed restriction on their deed in order to assure institutional control? If so, USACE should identify what law and regulation authorizes them to do so. The USACE should state whether it is prepared to

address issues regarding the taking of property, which could result from requiring institutional control and thereby reducing the value of the property and limiting the landowner's ability to use it.

Vicinity Properties

10. Also, since the Town of Tonawanda landfill is a vicinity property to this site, it should be added to the listing on page 4, the first paragraph of section 2, *Site Background*, and some discussion to the fact that this site will be addressed under a separate record of decision at a later date should be added.

Independent Verification Contractor

11. The use of independent verification contractors is a routine practice by other federal radiological agencies, such as the Department of Energy and the Nuclear Regulatory Commission. As such, New York State expects the USACE to do likewise at the Linde site. It is very disappointing that a federal agency remediating radiological contamination in New York State's environment is unwilling to subject its cleanup efforts to peer review, as would occur if the USACE employed an independent verification contractor. It is especially unfortunate when other federal radiological agencies are willing to do so when they are involved in similar cleanups in this State.

Application of Cleanup Criteria

12. This document does not discuss what mechanism will be used to determine compliance with the cleanup level. While the averaging over 100 m^2 areas is discussed, more recently, at site cleanups the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) techniques are being applied. The document needs to address how a successful site cleanup will be determined.

13. With regard to Ra-226 concentrations averaged over 100 m^2 as specified in Subpart B of 40 CFR Part 192 (and potentially for uranium) we believe that averaging is allowable, as long as the upper end is bounded by some hot spot criteria. It should be noted for the record that this Department does not accept the derived concentration guideline level-elevated measurement comparison as derived by MARSSIM. Instead, the hot spot criterion should be some small multiple of the cleanup criteria. In addition, if the 100 m^2 areas are different than the MARSSIM survey units (since MARSSIM Class 1 survey units can be up to 2,000 m^2), the 100 m^2 units should be defined at the same time the MARSSIM final status survey units are established, to prevent manipulation of the areas so that an area passes. In addition, the MARSSIM grid should be tied into the UTM grid system to allow replication in the future, if necessary.

14. This document needs to discuss the sum of the fractions rule. While individual standards will have been established for each radionuclide of concern (which meet an acceptable risk base exposure level for that individual radionuclide), a discussion on how the presence of multiple radionuclides will be evaluated should be included. The acceptable method the Department endorses is the sum of the fraction rule.

Definition of MED

15. Please note that the correct term for the abbreviation MED is "Manhattan Engineer District," not "Manhattan Engineering District," as is currently being used in many USACE documents.

ATTACHMENT 9

DENNIS A. CONROY COMMENTS
June 10, 1999

PRAXAIR

Praxair, Inc.
Post Office Box 44
Tonawanda, NY 14150-7891
Tel (716) 879-2000

June 10, 1999

U.S. Army Corps of Engineers
1776 Niagara St.
Buffalo, New York 14207

Attn: Mr. Ray Pilon

Re: Comments on Proposed Plan for the FUSRAP Former Linde Site

Dear Mr. Pilon:

We have reviewed the document you sent titled "Proposed Plan for the Linde Site Tonawanda, New York" dated March 1999 and are providing the following additional comments in response.

9.1 Praxair feels that "Alternative 4, Excavation, Decontamination and Institutional Controls" is unacceptable and are requesting that "Alternative 2", including the demolition and offsite disposal of Building 14 be implemented.

Since the fall of 1995, Praxair has maintained a cooperative relationship with the various agencies and contractors involved in the clean up of our Tonawanda site. With regard to Building 14, we have suspended and moved six critical Research and Development operations to accommodate remediation efforts. In terms of global competitive advantage, no price tag can be put upon this disruption. In terms of cash flow, we have invested $1.5 million in infrastructure improvements closely following this decontamination. Both of these actions were taken in the anticipation that we would receive Building 14 back with no radiological restrictions.

9.2 Your "Alternative 4" would leave us with institutional controls and deed restrictions on Building 14. Our R&D activities, by their very nature, require a continual need for maintenance, building modification and rearrangement Even minor activities such as mounting new experimental equipment to the walls and running new utility lines will be difficult under institutional controls. For Building 14 this translates into an endless need for Corps of Engineer involvement in the form of health physicist support and additional remediation as new contamination is uncovered. We find it difficult to understand why, of the four contaminated locations in the Town of Tonawanda: Praxair, Ashland 1, Ashland 2 and Seaway, our facility was the only site forced to work around the remediation and will be the only site left with a radiological restriction.

We have also considered an Alternative 7 which would entail continued remediation in Building 14 to achieve the free release of that structure. It is the opinion of our senior management that such a course of action would result in continued disruption and an uncertainty in scope, schedule, cost and ultimate outcome, which would prove intolerable to all parties, involved in the remediation effort

Accordingly, we urge in the strongest possible terms:

1. The selection of Alternative 2, Complete Excavation and Decontamination with Offsite Disposal.

2. An independent appraisal and compensation for Buildings 14, 57,67,73,73B, 75 and 76. (We were led to believe that these appraisals were imminent for the past several weeks.)

3. Reimbursement of our $1.5 million expenditures for Building 14 infrastructure improvements.

4. Reimbursement of the cost to move our six R&D operations from Building 14 to a new structure.

We are very pleased that the Corps of Engineers, CANIT and Praxair, Inc. are in alignment on post-remediation dose criteria. We simply must request, at this time, that the agreed upon criteria be applied uniformly to all contaminated locations in the Town of Tonawanda and that Praxair be left to run its business without the legacy and uncertainty of institutional controls.

Sincerely,

Dennis A. Conroy

Dennis A. Conroy
Site Manager

ATTACHMENT 10

LEONORE LAMBERT COMMENTS
June 10, 1999

LEAGUE OF WOMEN VOTERS
OF THE GREATER BUFFALO AREA
1272 Delaware Ave., Buffalo, NY 14209-2401 Tel: 716-884-3550

June 10, 1999

Lt. Col. Mark D. Feierstein
U.S. Army Corps of Engineers
FUSRAP Information Center
1776 Niagara Street
Buffalo, NY 14207

Dear Colonel Feierstein,

Re: Proposed Plan for cleanup of the former Linde site, Tonawanda

Thank you for extending the response time, and for the extra meeting held at the Holmes Elementary School June 3 to further explain your plan.

Having attended the April 27 presentation to the CANiT members, we hoped that the reaction of the public and some officials would prompt your department to come up with a more acceptable alternative for cleaning up the radioactive waste at the site. We were deeply disappointed that the plan was not changed to be more protective of human health and safety.

Your plan is inadequate as a cleanup except for very restricted use, and, since it does not include institutional controls, we are concerned that the life of the radioactive material on site will be much longer than community memory of its existence.

We understand that by working under the CERCLA (Superfund) law, you are allowed a great deal of latitude in cleanup, but we had hoped you would come closer to DOE's plans and NRC's rule. We also agree with the New York Department of Environmental Conservation request that you employ an independent verification contractor.

Enclosed are a few comments which we have prepared for your consideration.

Thank you.

Sincerely,

Lyle Toohey, L Leonore Lambert

Lyle Toohey, President Leonore Lambert, rad waste observer

June 10, 1999
LWVGBA

Comments on USACE cleanup plan for former Linde site, Tonawanda

10.1 Use of an independent verification contractor (IVC):
We note the New York State DEC's remarks suggesting that the use of an IVC is "routine practice by other federal radiological agencies, such as the U.S. Department of Energy and the U.S. Nuclear Regulatory Commission". We are disappointed that you have chosen not to comply with their numerous reminders of what appears to be logical procedure. We note that many others at the public meeting questioned your choice as well.

10.2 Uranium vs other materials:
1. The fact that uranium is not addressed with the other radionuclides in certain regulations, is more a gap in the law than a statement of acceptability as a non-threat to human health and safety. Uranium 238 has a half-life in the millions of years.
2. The decay chain of uranium includes thorium, radium and radon gas, at which point it is much more easily ingested by humans. However, uranium is the source and therefore a continual threat.

10.3 How 600 becomes 60:
These are some ways we presume this might be accomplished:
1. There could be a hot spot left at 600 with surrounding land having little or nothing. By averaging, as your presentation stated, "a soil volume of 2000 square meters by 3 meters thick", one could conclude that the average is 60 or lower. Place a house on the hot spot years from now, and residents will still get 600.
2. Mix, blend, spread the worst around to ensure an average of 60.
3. Take out everything over 600 and add clean soil to bring the average down to 60
In all cases, it will still be a radioactive site.
The DOE plan called for getting the levels down to 60 in the first place. This would leave the former Linde site as "clean" as the River Road sites. Neither one would be unrestricted for years to come, but they would be usable for certain activities.

10.4 CERCLA vs NRC
The Superfund legislation (CERCLA) uses risk rather than firm criteria to make decisions. The 600 choice meets the uranium recovery rule but allows a great deal of contamination for years to come. Meantime the Nuclear Regulatory Commission's policy to clean Uranium down to 5 pCi/g would leave no decay problem for the future. Unfortunately the NRC has not been part of the process here

Title 10 CFR Part 61, NRC's low-level waste disposal siting regulation, was promulgated with wide public support. The regulation assumes that institutional control cannot be considered reliable beyond 100 years.

CERCLA calls for a review every five years, and is limited to 200 years, nowhere near the life of the material in question. Furthermore, under CERCLA the people are denied protection that would be provided under NEPA, including the right to civil litigation and judicial review. We find this troubling.

Excavation and removal:
Your plans call for partial excavation and removal; partial in the sense of the criteria being used (leaving up to 600 pCi/g) which are well beyond acceptable levels, and also in declaring the soil beneath Building 14 inaccessible, rather than removing the building and the contamination beneath it.
We wish you would make that clear to the media, since the public impression is that a full cleanup is planned.

At the last meeting you announced an arrangement with Praxair to "clean" the building. We suspect that demolition will be necessary in the long run, in which case the soil below would be accessible. We hope that at that point you intend to remove it.

Background radiation:
1. It is true that there is natural radioactivity in many places, but usually not much more than the 1 pC/gr background radiation we might expect in the soil. Geology plays a part also, so that certain rock is more likely to contain radioactive material. The rock formation in Tonawanda is not such a type.
2. It might be more accurate to check other similar formations to get a probable natural background level.
3. At a recent presentation someone asked how the Army decides on the amount of background radiation naturally occuring in the area. The reply: we go upwind. Wind in the area shifts directions many times a day, but, assuming it is primarily from the west or south, our map shows only the river. When it comes from the east, it could be passing over the Linde site, giving rather high readings as "normal" nearer to the river.

Institutional control:
1. The Army suggests that readings up to 600 pC/gr (averaged to 60) will be safe "for intended land use". Sixty is still too high for a populated area, already nearby, and there will be no control over population shifts and land use far into the future.
2. Under present laws no one can guarantee that at some point some future government will not forget, as happened in a relatively short time in the case of Love Canal, and give permission for housing or a school on the site.
3. Institutional control will be necessary for reasonable future use of the site unless it is cleaned well below 60.

The January 1999 EPA Update on Federal Facility Cleanup and Reuse suggests several steps that might be taken to solve problems of institutional control, such as: restrictions written into documents, a single unified registry of institutional controls, requirements to consult the registry along with public access to it, long-term auditing and enforcement beyond the five-year review mandated by the Superfund law, and property law that ensures that institutional controls "run with the land" forever, so that sites may not be "closed out" until there is no longer a need for limits to protect public health and natural ecosystems.

The EPA further states that, even if all these steps are taken and backed with long-term funding, "institutional controls should still be considered unreliable. Understandably, those responsible for cleanups want to save money and assume restrictions will be effective." The article goes on to say that property owners want to use their land to the fullest extent, and that others may want to enter restricted land at some point. EPA concludes: "As time passes, there is a likelihood that even the best laid controls will be breached."

We are concerned about the possibility that Praxair will leave and that no one will want to buy a contaminated site; also that the state of New York will have to take over and pay for any further remediation.

We believe that the federal government is responsible. The problem began with the secret program to build the bomb, but that was over fifty years ago. We would like to think that the Army, as an arm of the federal government, will do their duty to remove the material as much as possible and protect the citizens of the future. However, we realize it is the will of Congress that is necessary to come up with funding, both for cleanup and for regulatory oversite such as should be handled by the NRC.

The people are entitled to protection of their environment and of human health and safety. We do not believe the cleanup plans for Tonawanda achieve that goal.

ATTACHMENT 11

MAUREEN F. LEARY COMMENTS
June 11, 1999

STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL

ELIOT SPITZER
Attorney General

PETER LEHNER
Environmental Protection Bureau

BY TELEFAX AND OVERNIGHT MAIL

June 11, 1999

Major Kally L. Eastman
Acting Commander
United States Army Engineering District
1776 Niagara Street
Buffalo, New York 14207-3199

Re: Proposed Plan, Linde Site, Tonawanda, New York (March, 1999)

Dear Major Eastman:

Kindly accept the following comments on behalf of the State of New York with respect to the March 1999 Remedial Plan for the Linde radioactive waste site located in Tonawanda, New York proposed by the United States Army Corps of Engineers ("USACE"). These comments are submitted on behalf of the State of New York and will supplement the April 30, 1999 comments submitted by the New York State Department Environmental Conservation ("DEC"). We understand that the public comment period for the Linde Plan has been extended until today, June 11, 1999.

The Energy and Water Development Appropriations Act of 1999 ("1999 Act") gave the USACE funding to clean up radioactively contaminated sites operated by the United States "subject to the administrative, procedural, and regulatory provisions" of the Comprehensive Environmental Response, Compensation and Liability Act, ("CERCLA"), 42 U.S.C. § 9601 et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan, ("NCP"), 40 C.F.R. Part 300. According to the USACE's representations to the State, we understand that the remedial actions undertaken at the Linde site are being done pursuant to CERCLA and the underlying regulations set forth in the NCP. The USACE is bound to comply with the express provisions of both.

Even in the absence of the 1999 Act, the provisions of CERCLA and the NCP apply to sites like the Linde site which were

The Capitol, Albany, NY 12224 ● (518) 474-8096 ● Fax (518) 473-2534

owned and/or operated, under contract or otherwise, by the United States at the time that radioactive and other hazardous substances were released to the environment. See 42 U.S.C. 9607(a). The United States falls within the class of persons responsible and otherwise liable under CERCLA for the remediation of such releases of radioactive or hazardous substances at sites in New York such as Linde. CERCLA contains an express waiver of sovereign immunity as applied to the United States. See 42 U.S.C. § 9620(a)(1). 11.1

This letter will set forth the deficiencies in the Linde Plan and recommend significant revisions to the remedial action proposed by the USACE under CERCLA.

FAILURE TO CONSIDER OR ATTAIN STATE AND FEDERAL ARARs

Of primary concern to the State is the absence of any reference in the Linde Plan to the applicable or relevant and appropriate requirements ("ARARs") of New York State law as required by CERCLA Section 121, 42 U.S.C. § 9621. Both CERCLA and the NCP require USACE to consider and apply both State and federal ARARs in proposing to undertake remedial action at the Linde site. New York's ARARs have been identified to the United States repeatedly since CERCLA's enactment.

CERCLA Section 121(d)(2)(A) states in part that " ... the remedial action selected ... shall require, at the completion of the remedial action, a level or standard of control for such hazardous substance or pollutant or contaminant which at least attains such [State or federal] legally applicable or relevant and appropriate standard, requirement, criteria or limitation." 42 U.S.C. § 9621(d)(2).

11.2 The Linde Plan states without sufficient explanation that 40 C.F.R. Part 192 is not "applicable" but is "relevant and appropriate" to the remedial action at the Linde site (Linde Plan, p. 9). Table 1 of 40 C.F.R. § 192.04 contains maximum concentration limits for radio nuclides in groundwater and appears to be applicable to the remedial action proposed in the Linde Plan. Table 1 identifies a maximum concentration limit of 30 pci/l for combined uranium 234 and uranium 238. The very limited groundwater data for the site indicates the presence of 70 pci/l of uranium, an obvious exceedance of the MCLs contained in 40 C.F.R.§ 192.04, Table 1. The Plan fails to identify the violation of this federal groundwater ARAR, and does not propose a waiver of same. Nevertheless, the Plan does not propose any remedial measures for the contaminated groundwater beneath the site although the Plan recognizes that this contamination occurred as a result of the disposal of 55 million gallons of radioactively contaminated waste in on-site injection wells.

The Nuclear Regulatory Commission's ("NRC's") regulations governing the handling and disposal of radioactive waste (see 10 C.F.R. Part 20) are a federal ARAR that the USACE has not considered in the Linde Plan. The USACE's experience with handling radioactive waste materials is relatively limited and, in the absence of NRC oversight, the Plan should at least consider the NRC's regulatory framework for handling and disposal of radioactive waste materials.

Other applicable ARARs are found in State regulations governing radioactive contamination in groundwater. 6 NYCRR Part 703.5 sets forth the State groundwater standards which must be achieved by the remedial action. These promulgated groundwater standards set forth maximum concentration limits of 3 picocuries per liter ("pCi/l") for radium-226, and 5 pCi/l for radium-226 and radium-228 combined. This applicable standard was not identified nor considered in the Linde Plan so there cannot be a showing that it can be attained. The limited groundwater data on the site of only "selected" contaminants also prevents a showing that there will be overall compliance with the State's groundwater standards.

The Linde Plan fails to identify several other significant State regulations which are applicable or relevant and appropriate to the remedial action at the site. The State regulations for preventing and controlling environmental pollution by radioactive materials in 6 NYCRR Part 380 also must be attained. These regulations govern disposal of radioactive materials and radiation dose limits for members of the public due to the release of radioactive material to the environment. These promulgated State standards should have been identified and considered by the USACE as part of the Linde Plan.

The Linde Plan also fails to identify the State procedural and substantive requirements for conducting remedial actions at sites in New York. See 6 NYCRR Part 375. These regulations define the process and criteria for making remedial decisions. The United States Environmental Protection Agency ("EPA") has a similar guidance document but it too is not mentioned in the Plan.

In addition to the foregoing requirements, there are federal and State criteria and guidance documents that fall within the category of items "to be considered" ("TBC") by the USACE in determining the appropriate remedial action to be undertaken at the Linde site. These TBC's are too numerous to detail here but include: EPA Directive 9200.4-18, "Establishment of Cleanup Levels for CERCLA Sites With Radioactive Contamination;" EPA Directive 9200.4-25, "Soil Cleanup Criteria in 40 C.F.R. Part 192 as Remediation Goals for CERCLA Sites;" Department of Energy ("DOE") Draft Regulations Governing Remedial Actions Undertaken At FUSRAP Sites (10 C.F.R. Part 834); DOE Executive Order 5400.5;

NRC Branch Technical Position on Disposal of Uranium Wastes, 46 Federal Register 205, pp. 52061-63 (1981); DEC's Technical and Administrative Guidance Memoranda ("TAGM") 4003, "Remediation of Soils Containing Radioactive Materials"; and TAGM 4030, "Selection of Remedial Actions at Hazardous Waste Sites."

11.2 CERCLA Section 121(f) requires that the State be given the opportunity to concur in the remedy proposed to be selected at facilities operated by the United States if such remedy fails to attain a legally applicable or relevant and appropriate standard, criteria or requirement. In its April 30, 1999 letter, DEC has advised the USACE that the State does not concur in the remedy for the Linde site that is proposed in the Plan. The remedy proposed in the Plan fails to attain State and federal ARARs since, among other things, there is no consideration of these ARARs (other than 40 C.F.R. § 192), and there is no remedy for groundwater proposed. The Plan must consider and propose to attain State and federal ARARs.

GROUNDWATER REMEDIATION

The March 1999 plan fails to propose any remedy for ground water despite the fact 55 million gallons of radioactively contaminated effluent was injected into wells beneath the site. The Linde Plan bases the USACE decision not to remediate groundwater beneath the site on "one validated ground water sample collected during the remedial investigation in 1992" (Linde Plan, p. 5). This is simply not a sufficient basis to support the USACE's decision not to remediate groundwater. Moreover, Tables 2 and 4 in the "Synopsis of Historical Information on Linde Effluent Injection Wells" contain only "Selected Radio nuclides" and "Select Groundwater Samples" and appear not to contain the complete universe of groundwater data for the site.

11.3 In short, additional data gathered over a more extended period of time and covering a more extensive, rather than "selected," group of analytes is necessary to determine the extent of contamination caused by the injection processes. Such data is necessary in order to support USACE's decision that groundwater need not be remediated.

As set forth above, CERCLA 121(d)(2) requires that the remedial action proposed "shall require ... a level or standard of control ... which at least attains such legally applicable or relevant and appropriate standard, requirement, criteria or limitation." Thus, any radioactive contamination left in groundwater beneath the site must attain the State groundwater standards in 6 NYCRR § 703.4. The Linde Plan does not mention nor propose to meet this State ARAR.

CERCLA Section 121(b)(1) sets forth a preference for remedial actions calling for permanent and significant reduction in the volume, toxicity, and mobility of hazardous substances or contaminants. Section 121(b)(1) requires that the USACE

> ... shall select a remedial action that is protective of human health and the environment, that is cost effective, and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. If the President [or the USACE] selects a remedial action not appropriate for a preference under this subsection, the President [or the USACE] shall publish an explanation as to why a remedial action involving such reduction was not selected.

42 U.S.C. 9621(b)(1). The Linde Plan fails to propose a permanent and therefore preferred groundwater remedy. Indeed, no groundwater remedy is proposed at all and no meaningful explanation is provided for this decision in the Plan. 11.3

CLEANUP OBJECTIVE OF 600 pCi/g FOR SOILS

The Linde Plan proposes a clean up goal of 600 pCi/g ("pCi/g") for residual uranium contamination that will remain at the site. This is a significant departure from the previous clean up goal of 60 pCi/g proposed by the DOE in the November 1993 "Proposed Plan for the Tonawanda Site" and confirmed as the clean up goal by DOE in a November 23, 1993 letter to DEC's Dr. Paul Merges. The USACE has failed to explain or justify this significant departure from DOE's previous proposal. 11.4

REMEDIAL ACTIONS UNDERTAKEN PURSUANT TO ENGINEERING EVALUATION/COST ANALYSES

The Plan also fails to identify the remedial measures that have been or will be undertaken pursuant to engineering evaluation/cost analyses ("EE/CA") previously issued by DOE. These EE/CA-driven remedial measures do not appear to constitute emergency removal actions authorized by CERCLA, 42 U.S.C. § 9604. Under the guise of DOE's EE/CAs, the USACE has undertaken remedial actions at the Linde site prior to the formal issuance of a proposed plan or a Record of Decision in violation of the NCP. 11.5

It is unclear whether the EE/CA remedial measures by the USACE have been undertaken in compliance with State and federal ARARs and with other regulatory requirements set forth in the CERCLA and the NCP. These EE/CA remedial measures have segmented the required comprehensive approach to the cleanup of the site and were undertaken without being subjected to the requisite

written analysis and decision-making protocol that is an integral part of DEC and, indeed, EPA's remedial action processes. 11.5

The Linde Plan fails to disclose the EE/CA remedial actions already undertaken, and fails to identify the impact such measures may have had on the long-term remedial goals for the site.

IMPROPER DISPOSAL OF RADIOACTIVE WASTE

Significantly, the USACE's EE/CA remedial measures have resulted in the improper disposal of radioactive waste material at an unlicensed facility. Specifically, radioactive waste from the Linde site containing greater than .05% by weight (or greater than 339 pCi/g) of total uranium was disposed at the Buttonwillow facility near Bakersfield, California which is not licensed by the NRC or the State of California to take such waste. The waste generated at the Linde site constitutes "byproduct material" as that term is defined in Section 11(e)(2) of the Atomic Energy Act, 42 U.S.C. § 2014(e)(2). This material therefore was not exempt from the NRC's licensing requirements and should have been disposed of at an NRC-licensed facility. The Buttonwillow facility is merely a RCRA Part C facility that is not designed nor permitted to deal with byproduct material. Moreover, neither USACE nor its contractor, Radian International, which handled the radioactive waste, hold an NRC license. The State of California has expressed disapproval of the USACE's improper disposal of Linde waste at a RCRA facility. 11.6

Radioactive waste generated from remedial activities at FUSRAP sites historically has been disposed in facilities licensed by the NRC or by agreement states, (such as Envirocare in the State of Utah), or at DOE-operated sites. Federal law mandates disposal of byproduct material at a licensed facility. See Atomic Energy Act, 42 U.S.C. § 2112 and 2114 (prohibiting transfer or receipt of byproduct material at an unlicensed facility). The NRC has long had a policy requiring disposal of byproduct material only at licensed facilities. This policy is based on the goal of protecting public health and the environment. The USACE's disposal of byproduct material from the Linde site is a violation of the AEA and is contrary to long-established NRC policy. See ORNL January 1994, "Health Physics Positions Data Base 190."

REQUISITE STATE AND FEDERAL PERMITS

As you are aware, CERCLA Section 121(e)(1), 42 U.S.C. § 9621(e)(1), contains an exemption for on-site remedial activities from the requirement to obtain State and federal permits. This exemption is expressly contingent upon compliance with CERCLA in selecting and carrying out remedial actions. The USACE's disposal of radioactive waste at a facility that is not licensed 11.7

by the NRC to accept such waste constitutes a violation of CERCLA Section 121(d)(3) which provides:

> In the case of any removal or remedial action involving the transfer of any hazardous substance or pollutant or contaminant offsite, such hazardous substance or pollutant or contaminant shall only be transferred to a facility which is operating in compliance with ... the Solid Waste Disposal Act (or, where applicable, in compliance with the Toxic Substances Control Act or other applicable Federal law) and all applicable State requirements.

See CERCLA, 42 U.S.C. § 9621(d)(3), (emphasis added). The "applicable federal law" referred to in CERCLA Section 121(d)(3) is the Atomic Energy Act ("AEA") which governs the disposal of byproduct material and other radioactive waste. The AEA Section 81, 42 U.S.C. § 2111, prohibits the transfer or receipt in interstate commerce of any byproduct material unless licensed by the NRC or otherwise authorized under AEA Sections 82 and 84, 42 U.S.C. § 2112 and § 2114. The USACE and its contractors hold no such license or authorization from the NRC.

In light of the USACE's violation of CERCLA in the disposal of radioactive waste from the Linde site, and its failure to recognize the applicable or relevant and appropriate State ARARs, the State believes that the exemption from federal and State permitting requirements provided in CERCLA Section 121(e) simply does not apply to the USACE's activities.

COMMUNITY ACCEPTANCE

The Plan has failed to discuss community acceptance of the proposed remedial action. In fact, there is significant opposition to the remedy proposed. At public meetings on May 27 and June 3, 1999, union officials, citizens' groups, and other public interest organizations and individuals formally expressed opposition to the Plan and questioned the degree of clean up proposed.

The NCP requires consideration of the community's acceptance of a proposed remedial action. The community's opposition to the Linde Plan calls for the USACE to revisit the remedy proposed, particularly with respect to the amount of contamination that will remain in soils and the absence of any proposal to remediate groundwater.

TIMING OF REMEDIATION

This site has been known to the United States for many years yet no comprehensive clean up has been undertaken to date other than limited work pursuant to DOE's EE/CAs. It is imperative that remedial efforts be undertaken forthwith but in a manner that is consistent with both State and federal law. We request that the proposed Plan for the Linde Site be revised within 90 days consistent with the State's comments, including the consideration of all State and federal ARARS. We further request that the USACE target the issuance of a record of decision ("ROD") for the Linde site no later than sixty (60) days from the issuance of the revised Plan, assuming that the State concurs in the Plan. Under this time frame, remedial activities approved by the State may commence before the close of 1999.

The State is aware that remediation of the Linde site has involved a complex and attenuated process dating from the early 1980s. It appears that some progress has been made by the USACE in the last eighteen (18) months. The State does not wish to foster further delays to the remedial activities proceeding as soon as possible. Nevertheless, remedial activities must be undertaken consistent with State and federal law and the cleanup must be protective of public health and the environment. We trust that the USACE will work closely with DEC in the future to assure that both of the foregoing objectives are met.

A representative of the USACE has advised that there may be a complete cessation of remedial efforts at the Linde site if the State voices its concerns regarding the manner in which the USACE has been proceeding. We trust that this is not representative of the USACE's position and that the Plan will be revised consistent with the State's comments so that a ROD can be issued forthwith and the clean up can proceed as soon as possible.

Very truly yours,

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