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Raymond L. Pilon, Project Manager
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, New York 14207-3199

Subject: Feasibility Study for Replacement of Utility Tunnels at the PTC

Dear Mr. Pilon:

In response to the feasibility study issued by the U.S. Army Corps of Engineers concerning the replacement of utility tunnels, the following observations and recommendations are submitted:

- The U.S. Army Corps of Engineers through extensive soil and sub surface testing has determined that sections of the site's utility tunnels at the east and center portions of the property are in need of remediation/replacement due to unacceptable levels of radioactive contamination in and around these areas. The tunnel sections affected by the contamination route are from the site's main electrical sub-station "D" south to the Building 104 Central Utility Complex and from the main sub-station "D" west to the Buildings 70B/2A junction area. The total length of tunnel which must be replaced is 830 feet.
- Six options were presented by the USACE for review by Praxair. We worked with our property management firm, Grubb & Ellis, to review the options and make a recommendation. The prices for the six options as submitted by the USACE ranged from \$2.7 to \$3.5 million dollars due to the different construction methods employed under each alternative.
- Two options are submitted in this report. One option is from the USACE list with a slight variation on electrical service routing and the second option will cover the very likely scenario that the current Building 70 complex and the Building 90 complex will be demolished. Preliminary study has revealed that less than acceptable levels of contaminates exist in the sub-surface of these two structures thus requiring demolition to properly execute clean-up.

- **Option #1** (Submitted by the USACE as Option 1B.)

This option entails demolition of the above mention 830' of existing tunnel and replacing this with an electrical duct bank heading south from Sub-station "D" to Building 104 consisting of (6) six 4" conduits containing the necessary cabling to power a majority of the property. The cabling would pass through Building 104 and distribute to the property via new and existing conduits. Steam, natural gas, condensate, water and compressed air, all originating at Building 104, would route to a new tunnel system that would be installed starting at Building 104 heading west approximately 70' then north along the Building 2A roadway 330' then west again 211' to the existing junction tunnel between Building 70 and Building 2A.

This tunnel system would be of a box culvert pre-cast concrete type, installed in a sectional system. The new tunnel system would contain a racking system to support all piping and conduits for utilities required at the north portion of the property. The north portion is considered the Building 70 and Building 2 complex and all administrative buildings such as the Building 100 complex and Building 101. The only deviation to this plan as submitted by the USACE on recommendation from the G&E Management staff is to re-route the main electrical lines/conduits supplying power from Sub-station "D" to the north portion of the property. In lieu of routing the cabling for these four circuits to the south then west then north to eventually reach the junction boxes at the Buildings 70/2 tunnel junction, we have suggested a direct route of the four circuits from Sub "D" to the Buildings 70/2 tunnel junction via an electrical duct bank. This method would result in a significant savings of 629' of installed cabling, conduit, and labor. Based on a recent install of 500 MCM 1" diameter copper cabling in a comparable line replacement, the cost of three conductor 500MCM cable, installed in 4" conduit is \$175 a foot +/- . The net savings realized after subtracting the concrete for the additional duct would be about \$100,000.

- **Option #5** (Submitted by the PX Site Manager & G&E Management.)

This option takes into consideration the eventual demolition of the Buildings 70 and 90 complexes. With the removal of these two large structures and the functions they support, a replacement structure of suitable size would be required. This requirement would need to be met before demolition would begin on the Building 70 and 90 structures. The Option #5 proposal calls for a future 180,000 sq. ft structure to house the GPMM functions, UOP operations (including future expansion of additional kilns), UOP R&D functions currently operating in Building 70B and the necessary production floor offices. The structure would also support the site's Shipping & Receiving functions and site maintenance facilities. The proposal calls for the building to be constructed at the northeast corner of the property near the existing Building 31. This area should be carefully considered when planning the demolition and rebuild of the tunnel system, with the future needs of the property in mind, as it has received extensive remediation, is deemed ready for a new build and is the only suitable building space for a structure of this

size. Following Option #1 above, should Buildings 70/90 fall victim to demolition, the proposed tunnel system would not be able to support a new structure of 180,000 sq. ft. with the activity planned for this building due to the location of the necessary utility piping needed for this structure (i.e. steam, condensate, air, water, gas). Option #5 proposes installing the replacement tunnel system as it currently exists. The design of this tunnel system allows for painless expansion of the property to the north and northeast by having convenient tie-in points for extended utilities. Option #5 also promotes easy maintenance and repair of the site's utility piping and electrical infrastructure. This reduces cost and more importantly, Down-Time. Option #5 would also allow for better vehicular and truck traffic distribution at the site. Large delivery trucks, contractor vehicles and maintenance personnel would be able to access the site from the northeast corner via a short service road heading north to Sheridan Drive. This would ease the traffic burden at the main gate for Praxair employee use.

In conclusion, it is critical that Praxair maintain the infrastructure and building capacity necessary to accommodate the operational and employment levels currently existing at our Tonawanda Site. If Buildings 70 and 90 are in serious jeopardy of demolition, they must be replaced in kind and their operations relocated prior to the commencement of any structural remediation on these facilities. Praxair has seriously considered this potential relocation and has concluded that the new Building 106 (replacing Buildings 70 and 90) would best be erected on the northeast corner of our site, as indicated on the attachment. Accordingly, Praxair strongly requests that Tunnel Replacement Option #5 be accepted by the USACE. It simply replaces in kind utility tunnel infrastructure which has or will be excavated and allows for utility feed to a critical replacement building.

Thank you,


Dennis A. Conroy
Site Manager

Enclosures