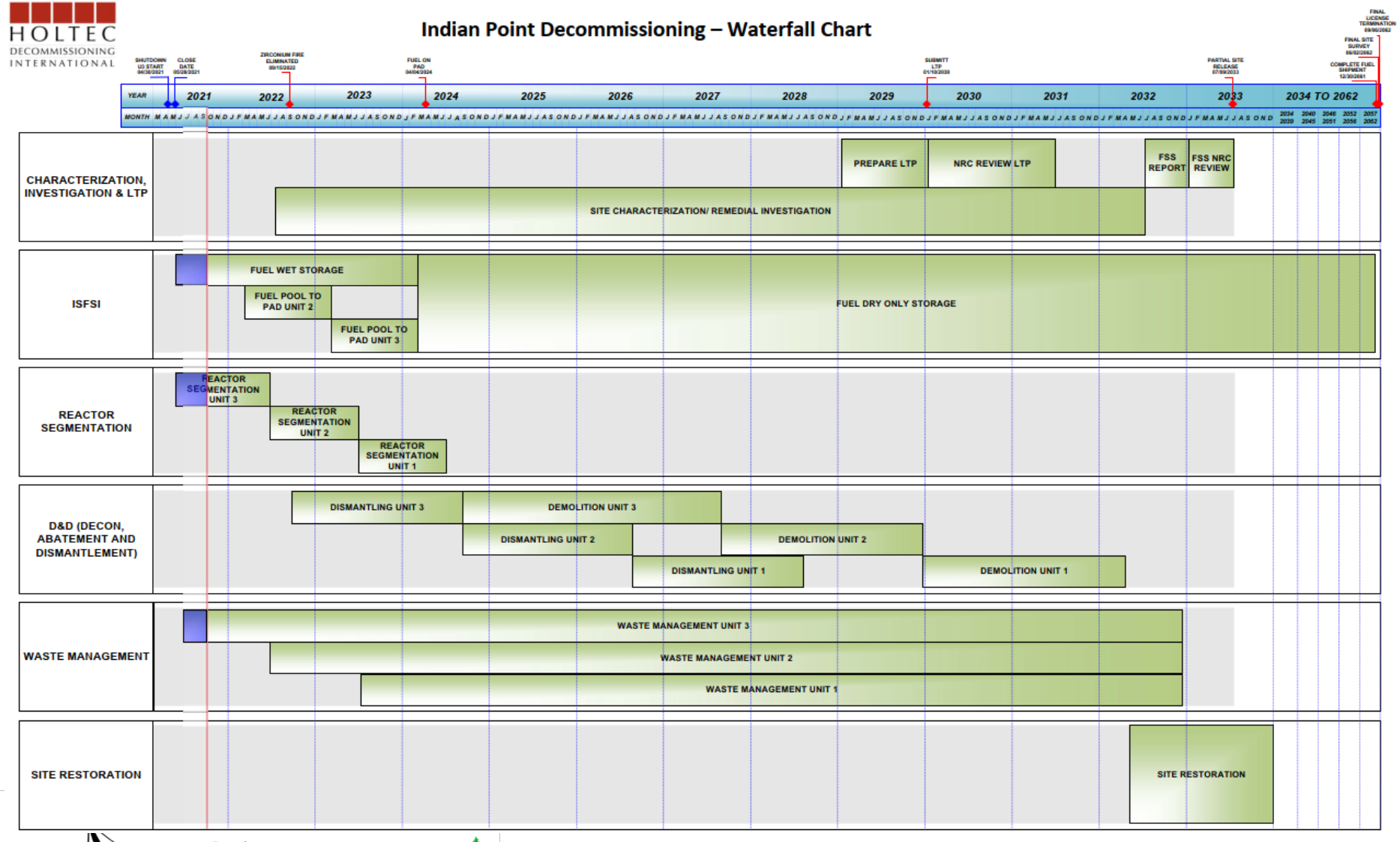
IPEC Decommissioning Update
October 27,2021

HOLTEC
DECOMMISSIONING
INTERNATIONAL

Comprehensive
Decommissioning
International

A Holtec and SNC-Lavalin Company

Timeline


Indian Point Decommissioning – Waterfall Chart
SHUTDOWN LD START 04/30/2021
CLOSE DATE 05/28/2021
ZIRCONIUM FIRE ELIMINATED 09/15/2022
FUEL ON PAD 04/04/2024
SUBMITT LTP 01/10/2030
PARTIAL SITE RELEASE 07/09/2033
COMPLETE FUEL SHIPMENT 12/30/2061
FINAL SITE SURVEY 06/02/2062
FINAL LICENSE TERMINATION 09/06/2062
YEAR
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034 TO 2062
MONTH
CHARACTERIZATION, INVESTIGATION & LTP
PREPARE LTP
NRC REVIEW LTP
FSS REPORT
FSS NRC REVIEW
SITE CHARACTERIZATION/ REMEDIAL INVESTIGATION
ISFSI
FUEL WET STORAGE
FUEL POOL TO PAD UNIT 2
FUEL POOL TO PAD UNIT 3
FUEL DRY ONLY STORAGE
REACTOR SEGMENTATION
REACTOR SEGMENTATION UNIT 3
REACTOR SEGMENTATION UNIT 2
REACTOR SEGMENTATION UNIT 1
D&D (DECON, ABATEMENT AND DISMANTLEMENT)
DISMANTLING UNIT 3
DEMOLITION UNIT 3
DISMANTLING UNIT 2
DEMOLITION UNIT 2
DISMANTLING UNIT 1
DEMOLITION UNIT 1
WASTE MANAGEMENT
WASTE MANAGEMENT UNIT 3
WASTE MANAGEMENT UNIT 2
WASTE MANAGEMENT UNIT 1
SITE RESTORATION
SITE RESTORATION

Agenda

- Site Status
- Regulatory Assurance / NRC Interaction
- Fall Fuel Transfer Campaign
- Independent Spent Fuel Storage Installation
- Reactor Vessel Segmentation
- Site Characterization
- Switchyard Separation
- Radioactive Waste Disposal
- Systems, Structures & Component Abandonments
- Gas Line Status
- Radiation Monitoring Systems
- Labor Update

Site Status

Site Status

- Unit 2 and Unit 3 reactors are defueled
- All fuel is currently located in their respective Spent Fuel Pools or the existing Independent Spent Fuel Storage Installation (ISFSI) Pad.
- The plant risk profile is green for both units relative to electrical power availability, Spent Fuel Pool Cooling and Spent Fuel Pool Building Closure.
- Spent Fuel Pool temperatures and levels, at both units, are within normal specifications.
- All primary cooling equipment is available and working satisfactorily with margin. (e.g., 6 Service Water Pumps are available per unit, only 1 needed for SFP cooling)
- Daily, weekly, monthly and year-to-date actual accumulated dose consistently meets dose established goals.

Regulatory Assurance

Regulatory Assurance

- The License Amendment Request (LAR) for the 32M Multi Purpose Canister (MPC) Storage System was approved by the NRC in June 2021.
- LAR for the Hi-Lift Crane is under NRC review. HI-Lift Crane will be used to cask fuel in Unit 3 SFP.
- The Post Shutdown Decommissioning Activities Report (PSDAR) submitted in Dec. 2019 is under NRC review - projected NRC review completion date is June 2022.
- Exemption Requests and the LAR for the Permanently Defueled Emergency Plan are scheduled to be submitted 4th quarter 2021.
- NRC jurisdiction transferred from the normal Reactor Oversight Process to the Office of Nuclear Materials, Safety & Safeguards.
- NRC Operational Independent Spent Fuel Storage Installation (ISFSI) Inspection held 9/27- 9/30.
- NRC Fire Protection and Financial Insurance Inspection held 10/18 – 10/21, Fire Protection Inspection was observed by NYS representative.
- NRC Security Inspection slated to start November 1st .

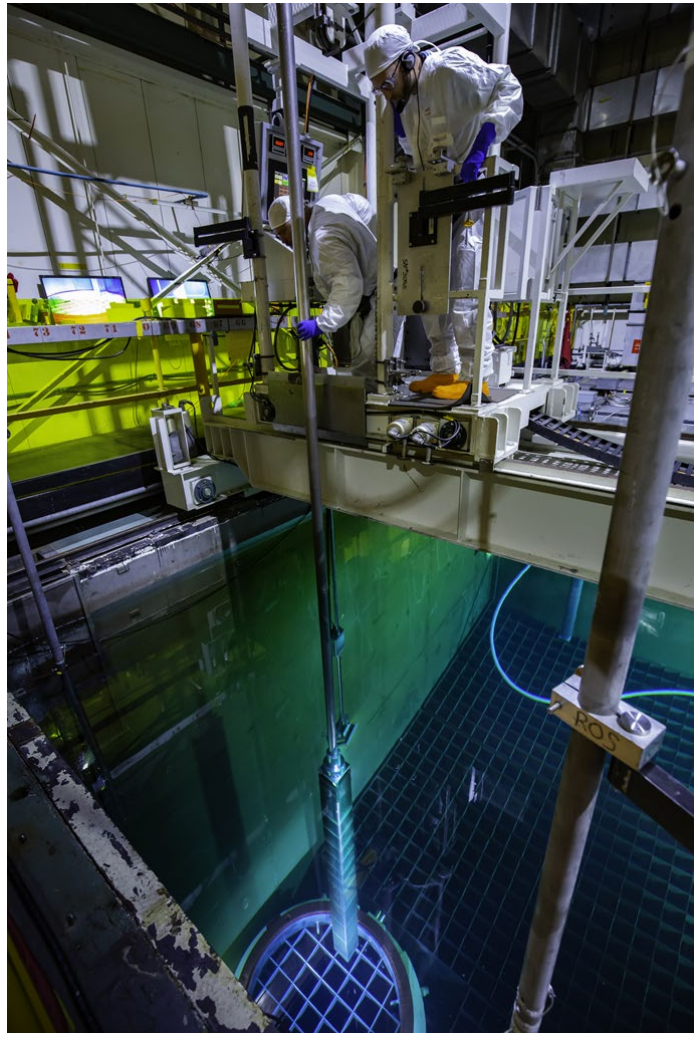
Fall Fuel Campaign

2021 Fuel Campaign

- The 2017 agreement between Entergy, NYS and Riverkeeper which supported license renewal and the unit shutdowns, required 24 casks of spent fuel to be transferred to ISFSI Pad by the end of 2021.
- At the time of sale (Entergy to Holtec) 20 casks were transferred, thus requiring the 4 additional casks to be transferred this fall.
- Four Multi Purpose Canisters (MPC's) and Four Hi-Storms were delivered to the site in the August / September time frame.
- As of today, two casks have been transferred to the ISFSI Pad, the remaining two are scheduled to be transferred by November 8th.
- In total for this campaign, 132 fuel assemblies will be casked and transferred to the ISFSI Pad.

2021 Fuel Campaign

- Loading fuel into a Multi-purpose canister (MPC) underwater in the spent fuel pool of Unit 2



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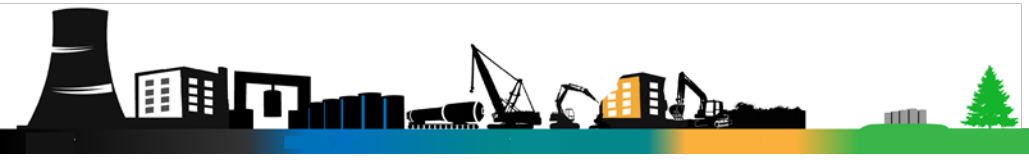
Independent Spent Fuel Storage Installation (ISFSI) Expansion



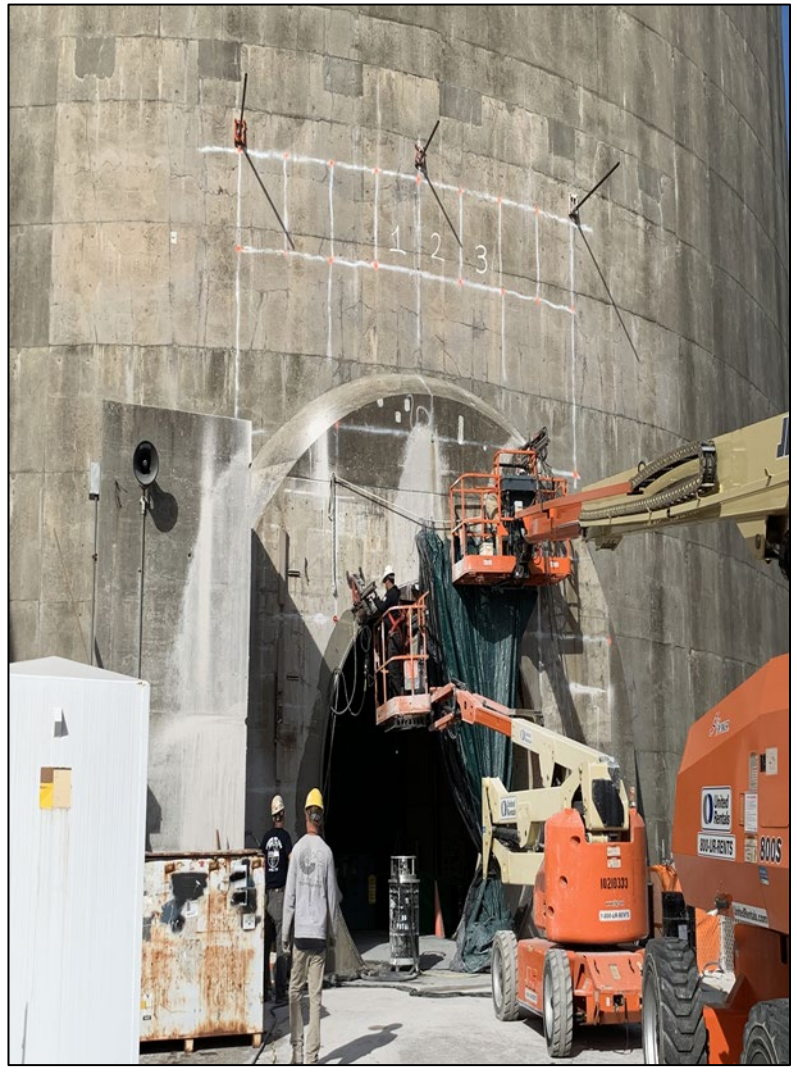
ISFSI Expansion

- The existing ISFSI Pad will hold 75 Hi-STORM Canisters. 125 are needed in total to store all spent fuel from the three reactors on site.
- A new pad is being constructed to contain 50 HI-STORM Canisters.
- New pad is being constructed adjacent to (east of) the existing pad.
- Prior to the new pad build, a storm water retention pond was required to be built – this is complete.
- Concrete pour for new Pad is scheduled for May time frame 2022.

Reactor Vessel Segmentation

Reactor Vessel Segmentation

- In addition to securing all spent fuel on the ISFSI Pads, the other critical path project being worked is Reactor Vessel Segmentation.
- Segmentation entails dismantling the reactor vessel, it's internals and the ancillary equipment previously used during plant operation. Any insulation on these structures that contains asbestos will be abated during the removal process. Any lead paint found will be abated or encapsulated again, prior to removal.
- Tooling to perform segmentation activities is scheduled to arrive on site in January 2022. Actual Segmentation activities are scheduled to start in the July / August timeframe.
- The existing Containment Building Equipment Hatch is being enlarged to accommodate removal of large pieces of plant equipment with a rail system. Unit 3 first then Unit 2 will follow.
- Diamond impregnated wire is used to cut into the containment wall. The diamond wire system uses water as it cuts to prevent dust / silica from going airborne.
- Entrance and egress of equipment to & from containment will be through specialty designed roll-up door.



Site Characterization

Site Characterization

Stage 1 of Plan is in progress:

- Scoping work plan explains how we will do the sampling required of areas within the site property. It will also provide tentative dates as to when the sampling will occur.
- Scoping work plan has been submitted to the NYS DEC for review on 10/25/21 as per the Joint Proposal.
- Final Plan will be agreed upon 1st qtr. 2022

Stage 2 of Plan:

- Perform Sampling late in 1st qtr. 2022
- Perform analysis 2022 (TBD)
- Review results 2022 (TBD)
- Perform additional sampling as needed.

Switchyard Separation

Switchyard Separation

- All IPEC Distribution busses are powered from 13.8kv sources from the Buchanan switchyard.
- Working with Con Ed legal to transfer ownership of Breakers 1& 3 (Unit 3 Output Breakers). Unit 2 output breakers 7-9 are currently owned by Con Edison
- 138kv feeders are deenergized and will be retired.
- Overhead lines on towers to and from IPEC are completely de-energized.

Radioactive Waste Disposal

Waste Disposal

- Any low level, waste disposal from IPEC is consistent with waste disposal practices when both units were operating. Waste shipments began in September.

- Packaging waste from Unit 3 and Unit 2 Containment Building continues. See slide 12.

- Contract is in place with Waste Control Specialists (WCS – Andrews Texas) to receive waste from Indian Point. Rail and truck are both options for transportation. Initial truck route is North on Broadway, East on Louisa Street, onto Route 9. Specific to local roads, no other route is used in Buchannan and Cortlandt.

- Container fabrication is on track for waste classified as A, B/C to support Reactor Vessel Segmentation. These are specially designed containers.

Waste Disposal

Packaging of material from U3 VC to U1 for disposal

Removal of Duct Risers

Disassembly of Duct Risers

Riser Packaging

Waste Shipment

U3 Liquid Waste Processing Skid Resin Cask

Headstand Disassembly and Packaging

Systems, Structures, & Component Abandonment

Systems, Structures, & Component Abandonment

- 90 of 132 unit 3 systems have been held-off and isolated. Unit 2 is complete.
- Abandonment priorities are based on areas needed for re-use and / or closure
- Office areas within multiple buildings have been cleaned with most furniture removed.
- Asbestos tiles have been removed where necessary in accordance with state requirements
- An Outage Trailer complex has been removed. (see slide 24)
- Owner Controlled Area site clean-up is in progress. (see slide 25)
- Office furniture and ancillary office supplies and equipment have been donated to local government buildings as well as local fire, police and ambulance stations.
- Prior to years end, we plan to demo:
  - Abandoned Covered stairway
  - Unit 3 Access Facility
  - Fabrication shop

SHB 72' Cleanup Complete

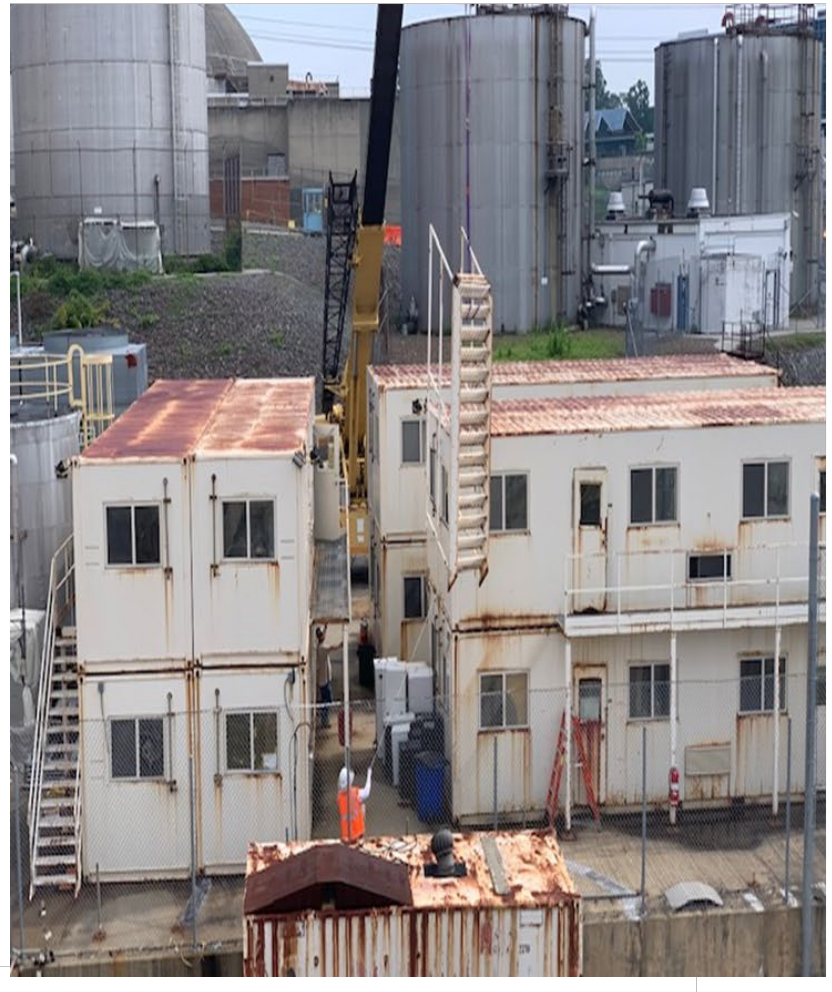
U3 Covered Stair Prior to Start

U3 Access Trailer Prior to Start

Fab Shop Demolition Prior to Start

Systems, Structures, & Component Abandonment

Trailer Removal



Systems, Structures, & Component Abandonment

Owner Controlled Area (OCA) Site Cleanup

Contracted the clean up for the south end of the OCA

- Salvaged Trailers
- Recycled Oversized Metal (ferrous and non-ferrous)
- Debris Removal

Prior to Start

Progress

Gas Line Status

Gas Line Status

- As part of the ongoing maintenance program, three separate areas were excavated to access the 26” pipeline. The excavations took place in the July / August time frame.
- Two of the pipe areas exposed had their coating removed, pipeline inspected and recoated.
- The third area had the coating removed, pipeline inspected, reinforcement bands installed, then recoated.
- Average depth of both the 26 and 30 inch lines is 4 to 6 feet. The observed excavation depth was a minimum of 6 feet closest to roadway on site.
- Quarterly meetings have been established between Holtec and Enbridge. The next meeting is scheduled for December 9th.

During Construction

Note the following:

- During the transfer of fuel from either spent fuel pool to the ISFSI Pad, we do not traverse across any of the gas lines on site.
- As in the past, if heavy loads are to be traversed across any gas line on site, steel plating will be laid down across the line(s). this was common practice when both units were operating (Steam Generators, Main Power Transformer)
- See map attached – demolition activities within the protected area of the site are south of all pipelines.

After Construction

Gas Line Configuration

Radiation Monitoring Systems

- There are a number radiation monitors at IPEC that continue to remain in service. We continue to maintain those monitors through our preventive maintenance and surveillance programs.
- There are effluent monitors that monitor potential release points and area monitors that monitor specific areas within the plant where activities continue to take place (e.g. Spent Fuel Pool Building).
- External to the plant, we continue to maintain 16 Rueter Stokes monitors that measure gamma radiation dose rates up to 100r/hr. These monitors are located within a 1-mile radius of the plant with 4 located on Broadway right outside the plant.
- These monitors provide real time monitoring with information provided to internal computer systems and displays. Trained Eplan personnel, during an event, will monitor these detectors and make recommendations dependent on data provided and procedural direction.
- In addition to internal monitoring, the Rueter Stokes data is also monitored at the 4 Emergency Operating Centers (Westchester, Putnam, Orange & Rockland Counties). Monitoring at the state level in Albany currently requires IT repairs which are being worked.
- In addition to the Rueter Stokes detectors, there are 57 thermolucient detectors (TLD's) within the EPZ that provide direct exposure values. In addition, we have a number of air sampling units. Both the TLD's and air sampling units provide accumulated dose data if any.
- NRC observed Eplan drill was performed on August 3rd with satisfactory results.

Labor Update

- The National Labor Agreement exists for Electricians, Operating Engineers and Laborer unions.
- This agreement takes precedence for those activities on site that deal with Demolition and Decontamination.
- The Presidential Agreement exists for all unions and may be used for construction activities.
- UWUA (Station Craft & Operators) and Teamsters (Security Officers) are also represented.
- The UWUA contract expires January 17th, 2022 – negotiations have started.
- Prevailing wage is applied to non-union specialty workers with no issues.