



Fuel Cycle Information Exchange Conference

Lessons Learned During the Construction of the National Enrichment Facility

June 23, 2009

**Stephen Cowne, Director
Quality & Regulatory Affairs
Louisiana Energy Services**

Who is LES ?



- LES is a subsidiary of Urenco Limited, a world leader in enrichment services
- 307 full time LES employees with goal of 320
- Peak construction period Spring '08 with 1,600 construction workers
- Construction experience on site provides more than 10,000 man-years of combined nuclear construction experience
- Diverse workforce with team members from all over the US and several European countries

Safety and Quality

- Safety and Quality remain the guiding principles.
- Over 5 million project work hours to-date with no construction lost-time accident.

Construction Staffing on Site

- LES provides construction management.
- Construction maintains approximately 700 + staff on site, with specific groups working six days a week in two shifts.
- Mechanical/ electrical component installation is current primary focus.
- Assembly and testing of centrifuges continues.

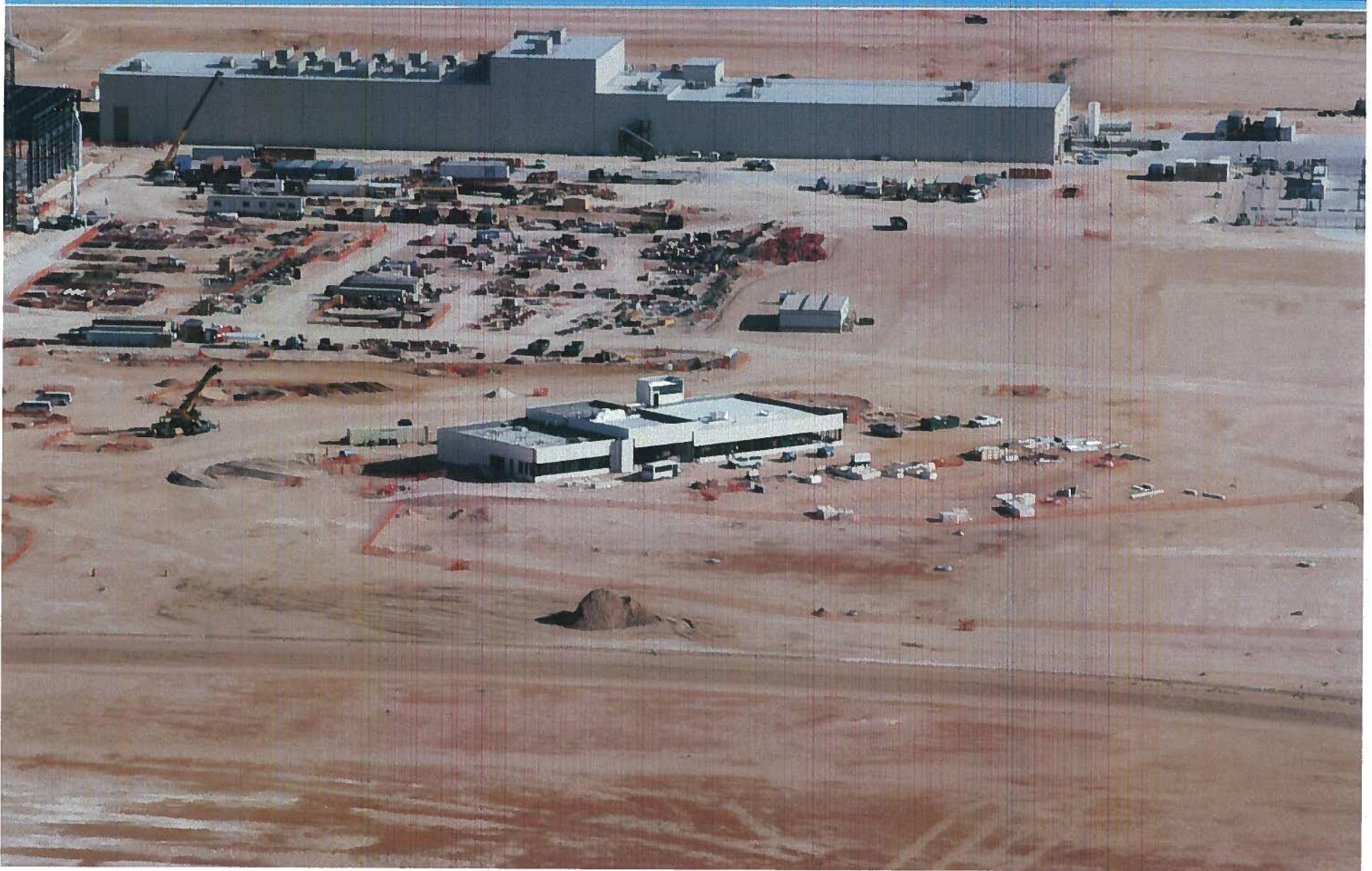
Expansion

- An expansion team is focusing on increasing the capacity of the plant from 3 million SWU to 5.9 million SWU.

Aerial View of Construction Site



Aerial View - Centrifuge Assembly Building



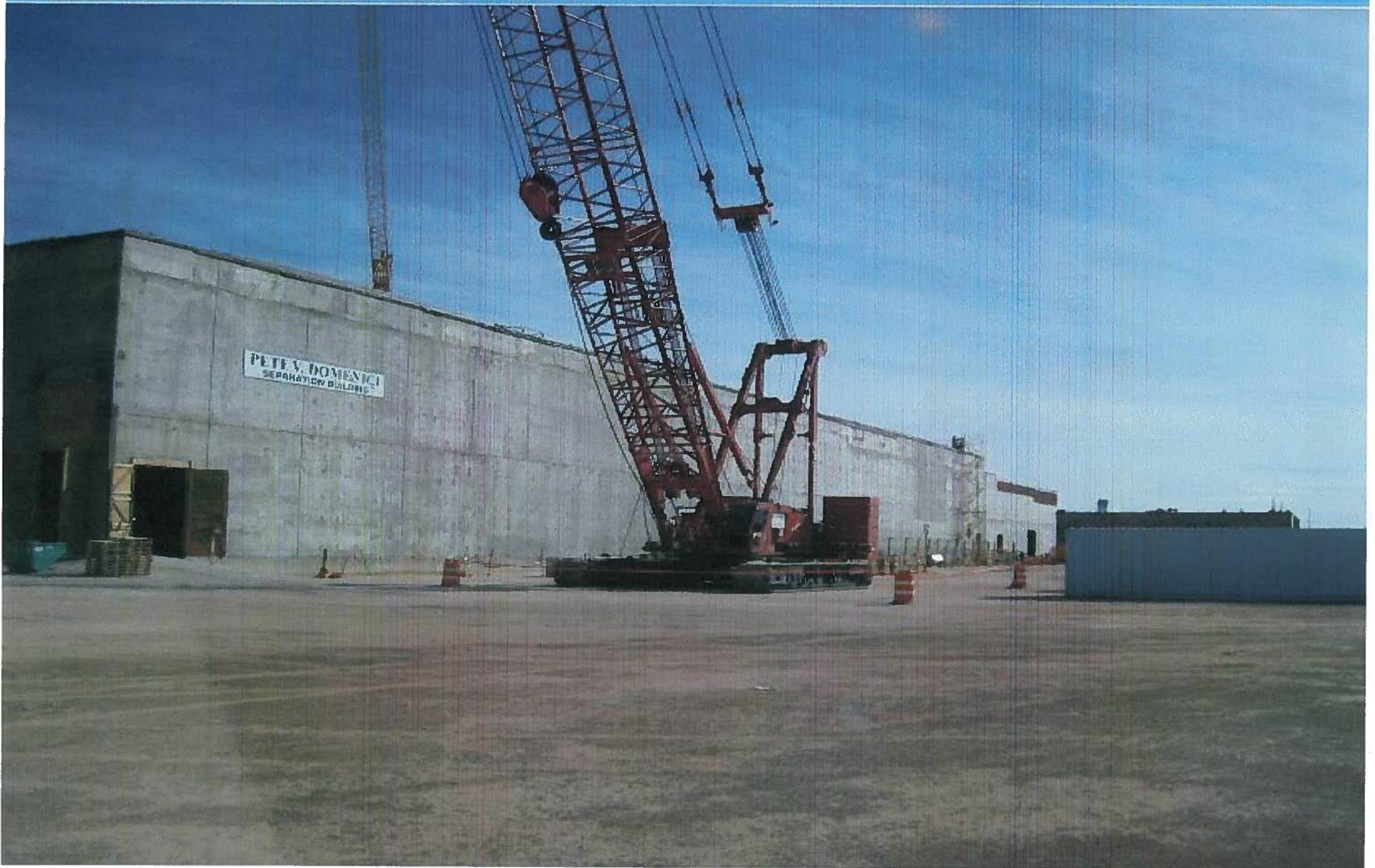
Internal View – Centrifuge Assembly Building



Cylinder Receipt & Dispatch Building



Domenici Separation Building



Separation Building Hall 2B



Technical Services Building



Internal View -Technical Services Building



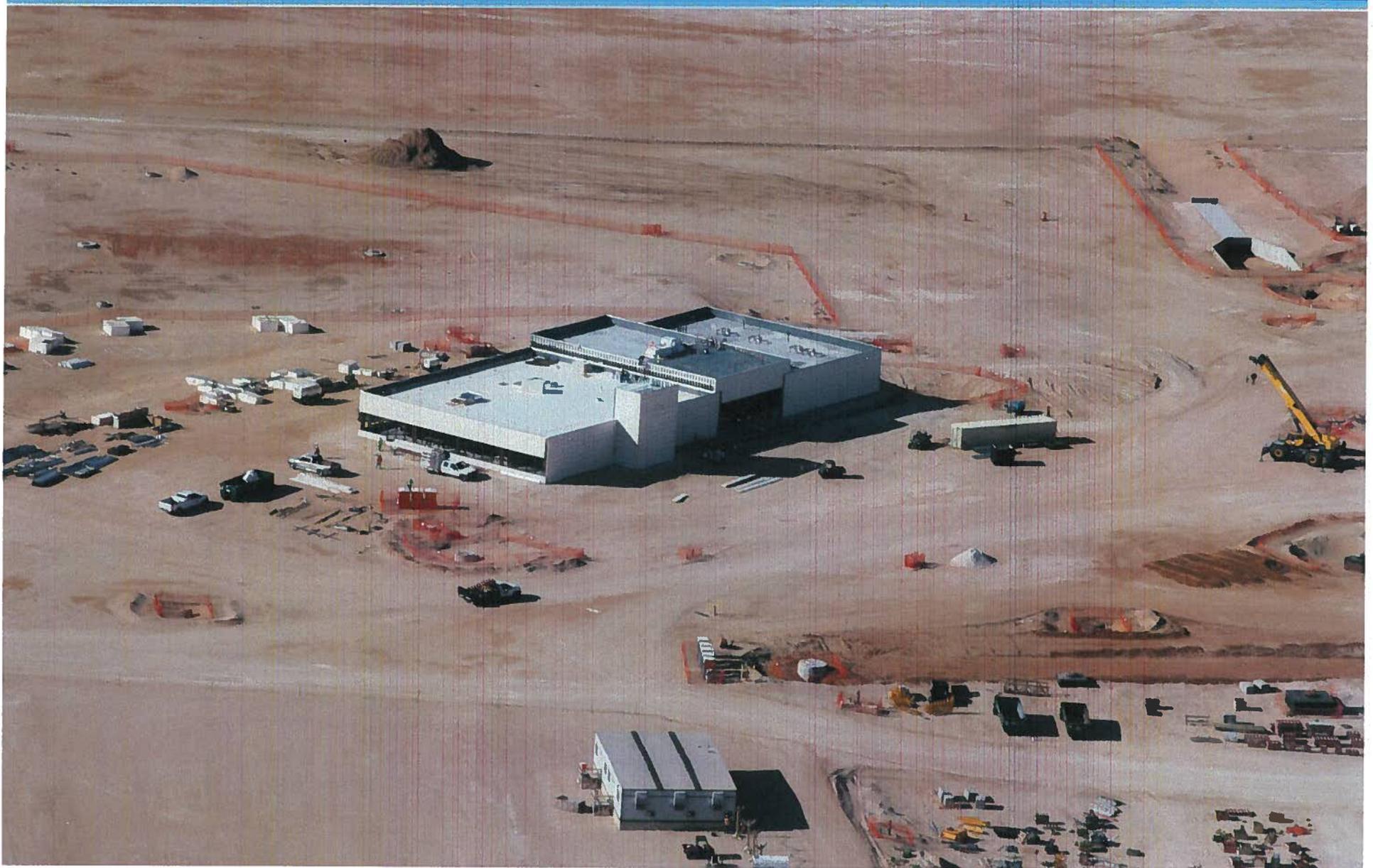
Central Utilities Building



Internal View – Central Utilities Building



Security and Visitors Center



COL:

- Constructing UNDER a Combined License (COL).
- Deviations from design/license must be reconciled.
- Be clear in the SAR, ER, etc. about what requirements apply during construction, commissioning, & operations.
- Telegraph requirements across the entire site – control work practices (Work Plans, QC Holds, Field Engineering Inspections).
- Implement 70.72 process for change evaluations.
- Ensure actions are tracked and closed prior to operations turnover.

Safety:

- Establish and enforce clear and consistent site standards (e.g., use of red barrier tape).
- Perform roving management observations with experienced personnel.
- Take swift and decisive action for non compliance and communicate (cable excavations, cell phone use, etc.).
- Perform rigorous pre-job briefs, stand downs when needed and roving safety watches.
- Emphasize safety and quality over schedule and cost.
- Reward safety and quality successes.

Safety Culture

- Part of the work force did not come to the project understanding safety culture.
- Establish a safety culture policy and determine where you are.
- Ensure site personnel understand the meaning of procedure and work plan adherence.
- Procedures must be established early and must be detailed enough for inexperienced workers.
- Licensee must build safety culture in employees and contractors.
- Licensee must lead the way in safety culture.

Oversight:

- Embed owner employees (license holder) in oversight of design and construction.
- Use one common Corrective Action Program for all organizations.
- Perform planning and constructability reviews.
- Issue work plans for work of all quality levels.
- Establish intrusive management observation program.
- Involve end user in key oversight functions (operations).
- Consider site-wide incentive programs.

NRC:

- The NEF has been a training site for new construction inspectors.
- The interface has been positive and supportive of operational dates while holding LES to compliance.

State:

- The NEF must be permitted and inspected, including occupancy permits (private entity).
- European equipment must be Americanized to US codes and regulations to meet State & NRC criteria.

Procurement:

- Establish capable Procurement Engineering function – most QL 1 procurement will be commercial grade.
- Focus on long lead time procurement items early in process – US manufacturing capability is limited.

QA:

- Overstaff group – many contractors/vendors will need assistance to re-establish their QA programs.
- Qualify the commercial grade dedication process early
- Qualify offsite vendors early.

Design:

- Complete well in advance of construction and allow adequate time for procurement and competitive bids.
- Ensure design is understood and can be constructed (tolerances specified, drawings reviewed by construction).

Schedule:

- Monitor multiple critical paths.
- Perform daily schedule reviews & assign Milestone Managers.
- Marathon – not a sprint.

Discussion / Questions