COMMISSION BRIEFING SLIDES/EXHIBITS

BRIEFING URANIUM ENRICHMENT

FEBRUARY 5, 2009

BRIEFING ON URANIUM ENRICHMENT

February 5, 2009

Gregory OD Smith
COO/CNO
Louisiana Energy Services (LES)

Successes of Enrichment - Licensing

- **Licensing application process went smoothly and met expectations. This was aided by having the Quadripartite Agreement in place**

Successes of Enrichment – Licensing (Continued)

- **NRC staff has been very supportive of licensing actions and worked with us to perform onsite inspections commensurate with construction schedule.**

Challenges of Enrichment – Licensing

- Constructing under a COL is much like operating a nuclear facility; however, with far more issues and decisions to deal with on daily basis
- Designing and building an enrichment plant has required many licensing actions on our and the NRC staff's part

Successes Enrichment - Construction

- **LES remains on track in meeting our construction schedule**

Challenges of Enrichment – Construction

- Constructing while operating requires careful evaluation of the facility safety basis to identify potential impacts on operations
- Construction resources for the industry lack a nuclear culture and require supervision

Challenges of Enrichment – Construction (Continued)

- Coordinating NRC inspection schedules with construction schedules and understanding that inspections cannot be performed until systems and equipment are available for service

Successes of Enrichment - Other

- LES is very involved with local community and works to earn trust
- Local community has been very supportive of LES during licensing and construction processes

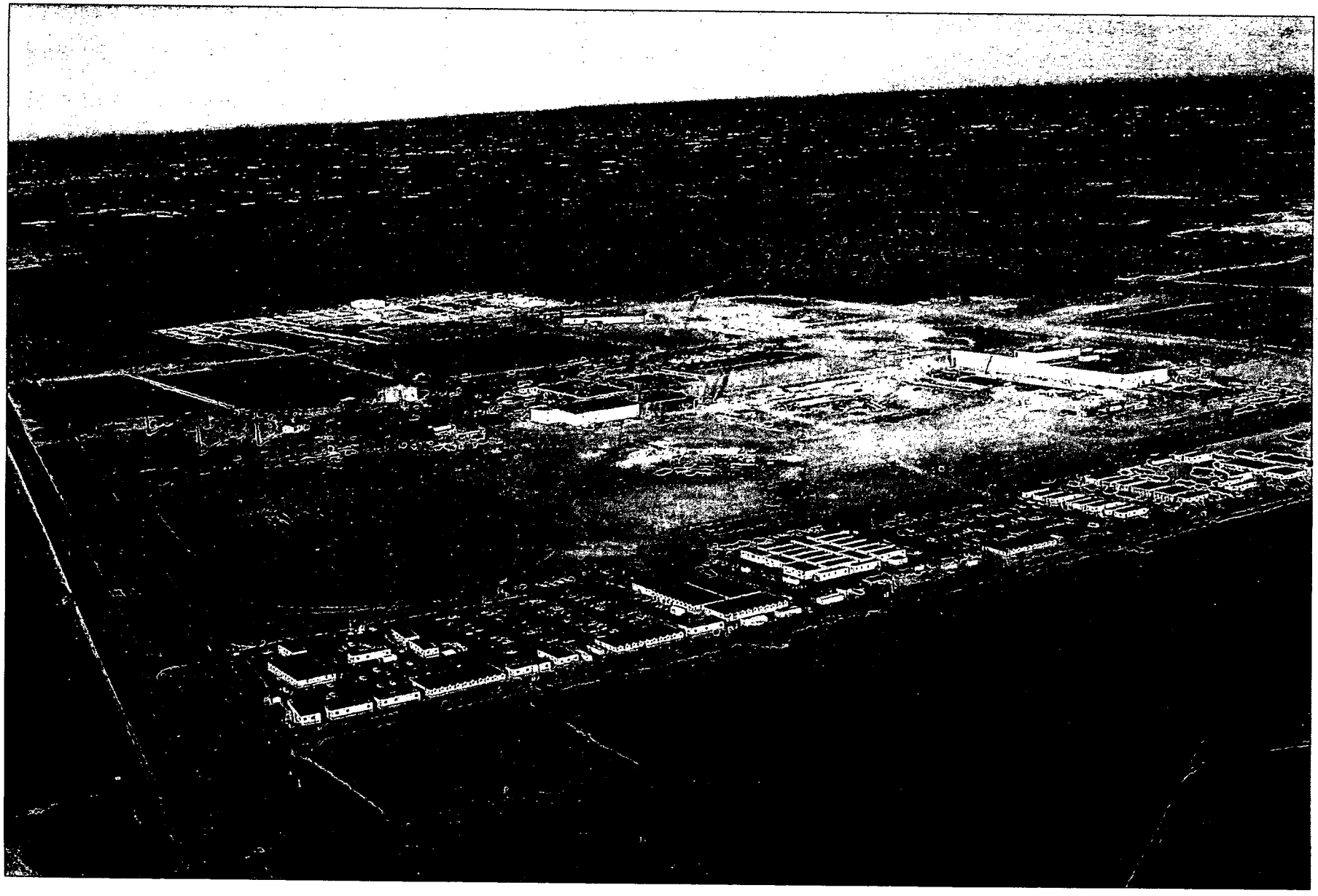
Challenges of Enrichment – Other

- Need for security clearances challenges US Government resources
- Experienced nuclear worker talent pool will be challenged in industrial revival

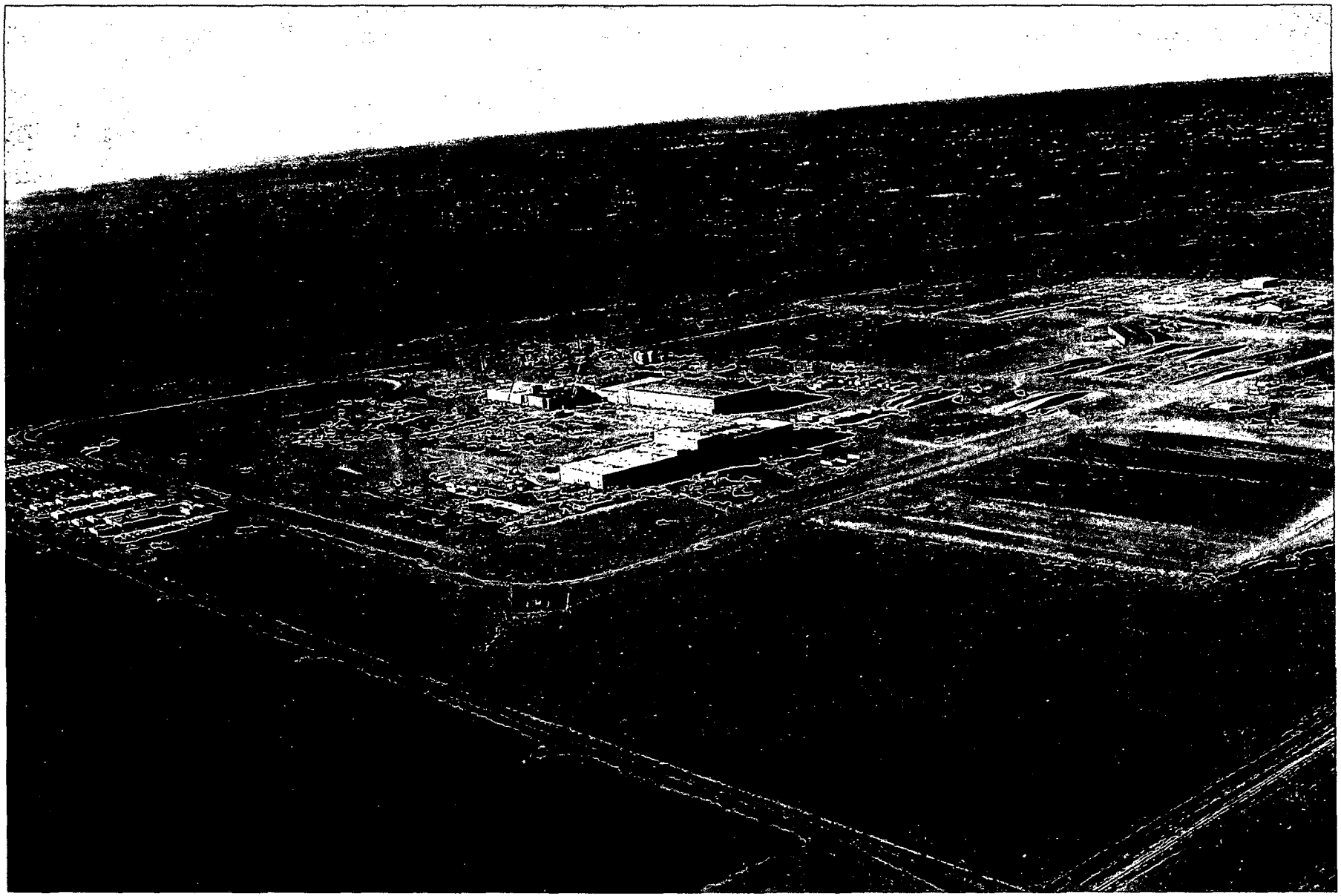
Challenges of Enrichment – Other (Continued)

- Depleted uranium disposal options
  - Privately operated deconversion facility
  - Urenco operated deconversion facility in U.K.

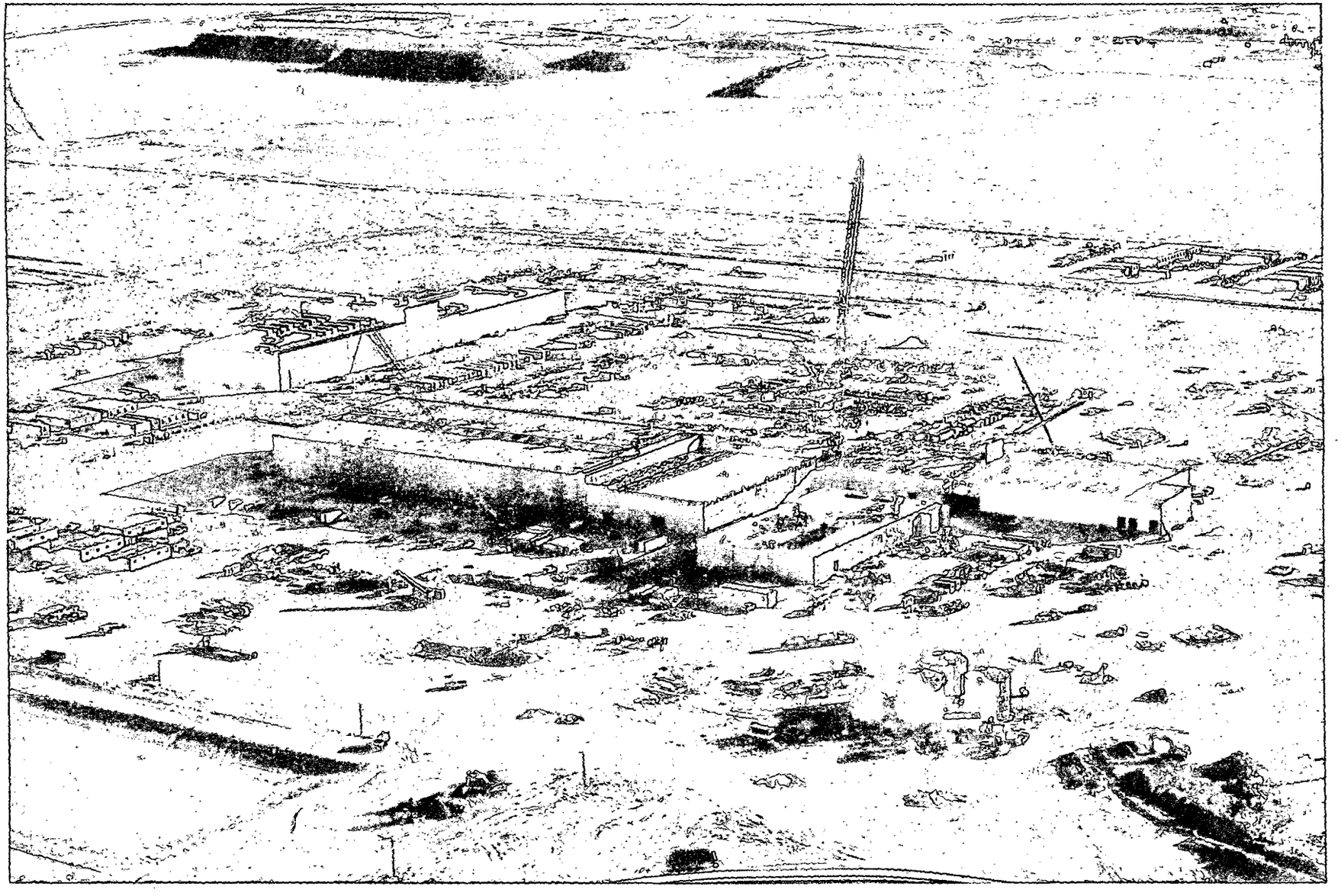
June 2007



January 2009



January 2009



January 2009

Acronyms

- AES – AREVA Enrichment Services
- CEO – Chief Executive Officer
- CFR – Code of Federal Regulations
- COL – Combined Operating License
- COO – Chief Operating Officer
- CNO – Chief Nuclear Officer
- EREF – Eagle Rock Enrichment Facility

Acronyms (Continued)

- HEU – Highly Enriched Uranium
- LES – Louisiana Energy Services
- LLC – Limited Liability Corporation
- NEI – Nuclear Energy Institute
- NEF – National Enrichment Facility
- NRC – Nuclear Regulatory Commission

AMERICAN CENTRIFUGE PLANT SUCCESSES AND CHALLENGES

February 5, 2009

Philip G. Sewell, Senior Vice President
American Centrifuge & Russian HEU
USEC Inc.

American Centrifuge Program

- Deploy a new, cost-effective advanced enrichment facility using U.S. technology
- Help revitalize the domestic nuclear industrial base
- Strengthen energy and national security
- Increase environmental quality

Conservative Approach

- Approach to licensing built on success of Lead Cascade
- Conformance to NUREG-1520 and other standard review plans
- Unique issues clearly identified
  - Expansion potential included in environmental evaluation
- Rigorous internal pre-submittal review process led to high quality submittal

Timely Licensing

- USEC's regulatory experience proved invaluable
- Timely identification and resolution of issues was essential
- On-site reviews and telephone conference calls were effective
- Commission direction and oversight helped ensure the mandatory hearing was efficient
- License for construction and operation issued essentially on schedule

Construction Progress

- Approached construction in gradual and deliberate fashion
- Numerous internal assessment and audit activities
- Construction commenced about one month after receiving license
- Industry lessons learned have been factored into planning
- Operational Readiness Review planning underway

GLOBAL LASER ENRICHMENT SUCCESSES & CHALLENGES

February 5, 2009

Tammy Orr, President & CEO,
Global Laser Enrichment LLC

Global Laser Enrichment

- Deploying next generation, safe enrichment technology
  - Wilmington, NC site selected Apr 08
  - Environmental Report submitted
  - Additional info to follow to complete application
- Closely followed guidance & fully informed by previous licensees' lessons learned

Global Laser Enrichment

- Additional enrichment capacity needed to fulfill anticipated U.S. & world requirements
- Additional domestic capacity needed for energy security
- Need for advanced enrichment technology in U.S.

Successes

NRC Licensing Staff Responsiveness

- Provided Lessons Learned at initial pre-application meeting
- Open & frequent dialogue
- Provided NRC fee budgeting information
- Quick response to questions

Successes (continued)

NRC Security Staff Responsiveness

- Timely Facility Clearances
- Timely Personnel Clearances

Successes (continued)

Co-locating with existing nuclear facility

- Integrated programs (Emergency Preparedness, Security, Radiation Protection…)
- Leveraging 40+ years of experience
- Building on GEH community citizenship

Successes (continued)

Environmental Report guidance (NUREG 1748)

Clear & detailed

Publicly available examples

Challenges

Part 70 guidance

- Decommissioning cost estimates
- Quality assurance
- Early or pre-construction activities
- *Staff interactions provided additional clarity*

Challenges (continued)

Protection of Classified Information and Technology

Classified secured network

Staffing with cleared personnel

Procurement of classified equipment

Commission Briefing on Uranium Enrichment

February 5, 2009

Sam Shakir, President & CEO

AREVA Enrichment Services

Need for New Domestic Enrichment Capacity

- Need for additional domestic enrichment capability is widely recognized
- Will serve the need of existing and new U.S. nuclear fleet
- Expiration of U.S. Russia HEU Agreement in 2013

EREF in Idaho

- AREVA notified NRC of intent on May 21, 2007
- AES submitted License Application on December 30, 2008
- NRC Public Meeting in Idaho on December 5, 2008
  - Over 400 attendees
  - Strong support

EREF License Application

- Comprehensive evaluation of alternate sites
- Demonstrates why new capacity is needed
- Plant utilizes a technology that has been used in Europe for years
- Plant design similar in many respects to LES NEF

Importance of Predictable and Efficient Licensing Process

- Hearing orders important to LES and USEC
- 30 month schedule; addressed key policy issues; license issued on schedule; strong licensing board; continued Commission oversight
- Similar approach for EREF

Additional Topics for Hearing Order

- Commission resolved several key policy issues
  - Depleted Uranium
  - Nonproliferation
- Hearing order should provide that these issues are resolved and cannot be relitigated

NEI Uranium Enrichment Task Force

February 5, 2009

Felix M. Killar, Jr.
Senior Director
Nuclear Energy Institute

NEI

Overview

- **Task Force Makeup and Objective**
- **Issues per licensing phase**
  - **Pre-application**
  - **Application review**
  - **Construction**
  - **Operation**
  - **License Termination**

NEI

Task Force Makeup

- **Membership**
  - **USEC Incorporated**
  - **Louisiana Energy Services**
  - **AREVA Enrichment Services**
  - **Global Laser Enrichment, LLC**

NEI

Task Force Objectives

- **Objectives**
  - **To identify policy actions and a regulatory framework to help ensure a stable and effective regulatory process for facilities that enrich uranium**
  - **Identification of requirements necessary (existing or proposed) to further support the licensing and regulatory oversight of enrichment facilities by consolidating them into a cohesive set of regulations to reduce the regulatory burden on applicants and licensees, as well as the U.S. Nuclear Regulatory Commission.**

NEI

Pre-application

- **Regulatory Requirements**
  - **10CFR Parts 2, 7, 8, 9, 11, 12, 19, 20, 21, 25, 26, 40, 61, 62, 70, 71, 73, 74, 75, 95, 110, 170, and 171**
  - **Regulatory Guides**
  - **Branch Technical Positions**
  - **Interim Staff Guidance**
  - **SECY/SRMs**
  - **Commission Orders**
  - **Commission Policy Statements**
  - **Pre-submittal meetings with NRC staff**

NEI

Application Review

- **Application**
  - **Environmental Report and License Application**
    - **Level of detail**
    - **Completeness**
    - **Timing of submittal**
  - **NRC Review time**
    - **Acceptance review**
    - **Contention submittals**
    - **Requests for additional information (RAIs) schedule**
    - **Environmental Report**
    - **Safety Evaluation Report**
    - **Public hearing process**

NEI

Construction

- Pre-construction activities
- Construction schedule
- NRC construction inspections
- Pre-operation completeness review
- Operation readiness

NEI

Operations

- **NRC Inspections**
  - **Resident Inspector**
  - **Routine Inspections**
  - **Special Inspections**
  - **Enforcement Actions**
  - **Regulatory Oversight Program**
- **License Amendments**
- **License Renewal**

NEI

License Termination

- Demonstrating criteria for free release of the site
- Task Force will monitor decommissioning proposed rule and related guidance

NEI

Industry Observations

- **Clear need for increased domestic enrichment capacity**
  - **Serve existing and future nuclear fleet**
  - **Increased energy security**
  - **Support domestic industry; create jobs**
- **Leveraging proven technology and industry experience**
- **Continued Need for Predictable and Efficient Licensing Process**

NEI

Industry Observations (cont.)

- **Commission oversight and efficient hearing process is critical**
- **Challenges:**
  - **Comprehensive set of requirements unique to enrichment facilities needed**
  - **More relevant guidance, e.g., quality assurance, pre-construction activities, environmental issues**
  - **Protection of classified information and technology**

BRIEFING BEFORE THE NRC ON THE LICENSING AND HEARING PROCESSES AND SITING ISSUES OF URANIUM ENRICHMENT FACILITIES

Thursday, February 5, 2009
Rockville, Maryland

The New Mexico Experience

Before the NRC

Good morning. My name is Ron Curry and I am Secretary of the New Mexico Environment Department. The State of New Mexico became involved in the licensing proceeding of Louisiana Energy Services before the U.S. Nuclear Regulatory Commission in 2004. At that time, we had little information on the proposed LES facility and had concerns for the safety of the citizens of New Mexico and for our environment relative to the project. LES had been denied a license and was unable to locate its operations in Louisiana and Tennessee. We did not want to place New Mexico at risk.

The state, through the Environment Department, petitioned

to intervene in the NRC proceeding on LES. The Governor's office was involved in the state's position because of the high profile nature of the project and the potential impacts the facility would have on New Mexico. The state, we believe, encountered unnecessary procedural hurdles before the NRC and a certain resistance to our intervention regarding our concerns regarding the storage and disposal of depleted uranium (DU). That resistance made it difficult for the state to have a forum to express its requirements.

The state had concerns regarding the volumes of DU that LES intended to store outside its facility and the length of time LES intended to store the DU. We had those concerns because of the history of other uranium enrichment facilities operated by the U.S. Department of Energy with regard to long term storage of DU and potential groundwater contamination. The state also did not want to become a "dumping ground" for radioactive

waste and wanted to ensure that LES or an affiliate would not dispose of uranium waste in New Mexico. The state, through the Attorney General's office, also had concerns regarding the amount of financial assurance LES was required to place for potential impacts created by the facility.

The NRC however, did not allow the state standing to address its major concerns. The NRC should consider in the future how to make its process more amenable and accessible to states.

New Mexico Groundwater Permitting

While the NRC proceeding progressed, the State of New Mexico had in place its own permitting process for LES. In our state, facilities that have any potential to contaminate groundwater are required to obtain a groundwater discharge permit from the Environment Department. We are proud to have one of the strongest, if the not the strongest, groundwater

protection program in the country. LES's operations had the potential to contaminate the aquifer through the facility's industrial processes and wastewater and, therefore, we required LES to obtain a groundwater permit. That process required LES to submit a detailed application to the Environment Department describing the facility's discharges and how it intended to protect groundwater from those impacts. LES's proposed permit with the Environment Department called for a storm water pond, a sewage treatment system and two evaporation ponds that would hold industrial and domestic wastewater from the proposed plant. The Environment Department conducted a thorough review of LES's application and held a public hearing in the community where LES proposed to locate. After submitting to the state's ground water permitting process, the Environment Department determined that LES met all

requirements, and we issued a ground water permit to LES in May 2006.

The Settlement Process

Despite the difficulties in obtaining standing before the NRC, the State was able to enter into settlement negotiations with LES to negotiate the issues of concern. We believe the State was able to enter into those negotiations because the state's authority over the groundwater permit motivated LES to try to resolve the issues that had been raised by Governor Richardson, including allowable amounts for the temporary storage of DU in New Mexico, and because LES was interested in showing the Governor that it was willing to address his concerns. The negotiations with LES involved the Governor's Office, the Environment Department and the Attorney General's Office.

The negotiations were hard fought, but the State and LES ultimately agreed on all issues of concern. The parties agreed on

limits on the amount of DU that could be stored on site and the length of time any one cylinder could be stored at the facility. The maximum cylinder limit is 5,016, and no one cylinder can be stored on site more than 15 years. The state wanted firm assurance that the limits would not be violated and, therefore, we negotiated a provision that a violation of the limits would lead to suspension of LES's production of enriched uranium. LES also agreed not to dispose of DU waste in the State of New Mexico. Finally, LES agreed to increased contingency factors in its financial assurance package.

We required that, as part of the agreement, all those conditions become part of the NRC license, enforceable by the NRC. The parties requested that the NRC approve those conditions and make them part of the license -- even though they were not issues before the NRC that the State was able to raise – and the NRC agreed. The result, we believe, is a strong

agreement and license that protects the State of New Mexico.

LES and Community Involvement

LES has shown itself to be a good corporate citizen despite LES's rocky beginnings with the state. It worked hard to gain community support for its project. LES certainly benefited from locating in an area of the state with little development and that needed jobs. But LES also worked hard to demonstrate to the community that its facility would be safe for the residents and for the environment. LES gained the support of the community and that helped the company through the groundwater permitting process before the Environment Department. However, there were some members of the community opposed to the facility. We received one request from a citizens group, Citizens Against Radioactive Dumping, asking for the denial of the permit. That group has continued to fight the facility's permit and is awaiting a decision from the New Mexico Court of

Appeals. We anticipate the Court of Appeals with uphold the Department's permit. Despite that group's position, community support for the facility outweighs opposition.

At present, then, LES is operating under the NRC license and the Environment Department's groundwater permit, and the license; and LES is constructing its facility as we speak.

NMED Discharge Permit Summary
Louisiana Energy Services (LES) - National Enrichment Facility (NEF)
(February 2, 2009)

Facility Type: Uranium Enrichment By Centrifuge Method
NMED Permit: Ground Water Discharge Permit (DP-1481)
Other Federal Permits: NRC License
EPA NPDES General Construction and Multi-Sector Storm Water

Major Discharge Permit Components:

Pond 1 - Site Storm Water Detention Basin:
- Unlined pond for evaporation and infiltration.
- Contains storm water runoff from roads, parking areas and building roofs over a 96 acre area

Pond 2 - Uranium Byproduct Cylinder (UBC) Storage Pad Storm Water Retention Basin:
- Single synthetic lined evaporation pond underlain by clay bedding layers.
- Three untreated discharges will evaporate and leave residual salts:
  1) Storm water from the uranium cylinder by-product (UBC) storage area.
  2) Cooling tower blowdown water.
  3) Heating boiler blowdown water.

Pond 3 - Treated Effluent Evaporative Basin:
- Double synthetic lined evaporation pond with leak detection underlain by clay bedding.
- Collects treated wastewater from the Liquid Effluent Collection and Treatment System.
- Effluent sources: hand wash, showers, laundry, aqueous lab, decontamination system wastewater, separation plant condensate.
- Prior to effluent discharge, solids from the treatment system collected for off-site disposal.

Sequencing Batch Reactor (SBR) and Advanced Treatment Units (ATUs) for Domestic Wastes:
- SBR treats main facility buildings domestic wastes to stds. then discharges to leachfield.
- Three other individual ATU's treat domestic wastes for 2 guard shacks and a visitor center.

Synopsis of NMED Discharge Permitting Actions:

April 26, 2004	-	LES submits discharge permit application to NMED.
May 17, 2004	-	NMED determines permit administratively complete.
September 2004	-	LES completes 1st public notice of permit application.
May 25, 2006	-	All technical requirements addressed, Draft permit issued by NMED.
July 20, 2006	-	Public notice of draft permit published in Albuquerque Journal, Hobbs Sun and Eunice News. 30 days allowed for public comments and requests for hearing.

August 20, 2006 - Received 2 requests for hearing on federal issues, and 1 request for denial of state permit by 160 Lea County and neighboring Texas residents.
October 5, 2006 - Public meeting on draft permit in Eunice. Permit opposed by CARD ().
January 29, 2007 - Public hearing conducted in Eunice. CARD testifies against permit.
February 28, 2007 - Discharge permit approved based upon Hearing Officers Report.
March 28, 2007 - CARD files appeal of permit to WQCC.
April 14, 2008 - After remand, supplemental petitions and briefs, WQCC upholds NMED permit
May 15, 2008 - CARD files appeal of permit with NM Court of Appeals
December 2008 - Completion of filing of briefs with NM Court of Appeals
Currently - Awaiting decision of NM Court of Appeals

Key Federal issues:

- No deconversion plant of by-product.
- No final waste location.

Synopsis of Federal Regulatory Process:

1. In 1997, LES consortium attempted to locate the plant in southern Louisiana
2. In 1997, LES withdrew its application in 1997.
3. In 2002, LES considered locating the plant in Eastern Tennessee.
4. In 2002, LES consortium modified with different financial backers (except for Duke and Entergy) that include URENCO, Duke Power, Entergy, British Energy, CAMECO, Westinghouse, and Exelon. URENCO is a consortium composed of British Nuclear Fuels, Ltd.; the Dutch government; and several German nuclear companies. Urenco operates three similar uranium enrichment plants at Capenhurst, England; Almelo, Netherlands; and Gronau, Germany.
5. In August 2003, LES sponsors trip for Lea County residents, entrepreneurs and politicians visit the plant in Almelo, Netherlands.
6. In August 2003, LES announces relocation from Tennessee to New Mexico.
7. On December 15, 2003, LES submits NRC application.
8. On January 13, 2004, NRC accepts LES application and estimates 20 months for review.
9. In August 2004, several state official visit the plant in Almelo, Netherlands.
10. In March 4, 2004, over 200 attend NRC public meeting for LES site. Tannis Fox and Jon Goldstein, NMED attend meeting.
11. On September 3, 2004, the Draft Environmental Impact Statement (EIS) issued.
12. On October 14, 2004, about 200 attend NRC public meeting in Eunice regarding draft EIS. State attendees: Tannis Fox (NMED OGC), Kevin Myers (NMED GWQB) and Karen Fisher (NM AG's office).
13. On November 8, 2004, NMED submits comments on draft EIS to NRC. Comments include a potential groundwater and surface water contamination issue with septic tanks.
14. On June 3, 2005, LES and the New Mexico AG Madrid and Governor Richardson formalize waste storage agreement.
15. On June 8, 2005, the Atomic Safety and Licensing Board ruled in favor of LES and dismissed the environmental contentions of the Nuclear Information and Resource Service and Public Citizen (NIRS/PC).

16. On June 15, 2005, the Nuclear Regulatory Commission (NRC) issued the Final EIS and Final Safety Evaluation Report (SER).
17. On March 3, 2006, URENCO buys out Westinghouse share of LES.
18. On June 23 2006, Atomic Safety and Licensing Board issues favorable Hearing Decision for LES facility.
19. On June 23, 2006, NRC license issued for LES.

U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

Uranium Enrichment: Successes and Path Forward

February 5, 2009

Brian W. Smith, Chief

Uranium Enrichment Branch

Division of Fuel Cycle Safety and Safeguards

Office of Nuclear Material Safety and Safeguards

Agenda

- **Licensing Reviews**
- **Construction Inspection**
- **Public Involvement**

Licensing Reviews

- **Successes**
  - **USEC Inc. Lead Cascade - 2004**
  - **LES National Enrichment Facility - 2006**

Licensing Reviews

- **Successes (cont.)**
  - **USEC Inc. American Centrifuge Plant - 2007**
  - **GE-H Test Loop - 2008**

Licensing Reviews

- **Successes (cont.)**
  - **Decommissioning financial assurance**
  - **Cooperation with Department of Energy**
  - **Recertification of the Gaseous Diffusion Plants - 2008**

Licensing Reviews

- **Path Forward – Facilities under construction**
  - **Licensing amendments**
  - **Dispositioning depleted uranium**

Licensing Reviews

- **Path Forward – New Applications**
  - **Building on prior application reviews**
  - **Applying lessons learned**
  - **Optimizing use of NRC and contractor resources**

Licensing Reviews

- **Path Forward – New Applications (cont.)**
  - **Transferring knowledge**
  - **Protecting sensitive information**
  - **Evaluating terrorism in AREVA EIS**

Licensing Reviews

- **Path Forward – New Applications (cont.)**
  - **Using an integrated team to prepare the EIS and SER**
  - **Preparing for hearings**

Construction Inspection

- **Successes**
  - **Risk-informed construction inspection program**
  - **Sharing inspectors between fuel cycle facility and new reactor programs**

Construction Inspection

- **Successes (cont.)**
  - **Early identification of quality and program issues**
  - **Effective use of lessons learned (past and present)**

Construction Inspection

- **Path Forward**
  - **Enhancing efficiency and effectiveness**
  - **Conducting operational readiness reviews**
  - **Enhancing oversight process**

Public Involvement

- **Successes**
  - **Engaged public in licensing NEF and ACP**
  - **Coordinated with local officials**
  - **Informed public in support of GDP recertification**

Public Involvement

- **Path Forward**
  - **Involving public in licensing GE-H and AREVA facilities**
  - **Reaching out to local officials**
  - **Enhancing openness and stakeholder participation**

Closing

- Achieved success in
  - Licensing
  - Inspecting Construction
  - Involving the public
- Enhancing regulation by applying lessons learned
- Appreciate Commission guidance and stakeholder feedback

Acronyms List

- **ACP – American Centrifuge Plant**
- **DOE – U.S. Department of Energy**
- **GDP – Gaseous Diffusion Plant**
- **DU – Depleted Uranium**
- **GE-H – General Electric – Hitachi**
- **EIS – Environmental Impact Statement**
- **LES – Louisiana Energy Services**
- **NEF – National Enrichment Facility**
- **SER – Safety Evaluation Report**

For more information visit:
www.nrc.gov/materials/fuel-cycle-fac/ur-enrichment.html