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EXHIBIT GLE-018

# GLE Commercial Facility Mandatory Hearing

**ASLB Presentation Topic #'s 5B, 5C, 5E, 5F & 5G**  
**Alternatives Analysis, Cost-Benefit Analysis,**  
**Construction Schedule, Electrical Infrastructure, and**  
**Implementation of Mitigation Measures**

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# Overview

- Alternatives analysis (5.B.)
- Cost-benefit analysis (5.C.)
- Effect of delayed construction (5.E.)
- GLE Facility electrical requirements (5.F.)
- Implementation of mitigation measures (5.G.)

# Alternatives Analysis (5.B.)

- Types of alternatives (technology, design, site and facility location)
- The No-Action Alternative
- Benefits of the Proposed Action
- Environmental costs of the Proposed Action
- Proposed Action vs. No-Action Alternative

# No-Action Alternative

- GLE does not construct the proposed facility.
- Enrichment services continue to be provided by current suppliers.
- No further alterations to the Wilmington Site occur.
- No further benefits or costs to the region of influence or Nation accrue.

# Benefits of the Proposed Action

- Positive socioeconomic impacts
- Increase in tax revenue
- Another domestic source of enrichment services provides greater diversity and security of supply for U.S. power reactors
- Deployment of next-generation enrichment technology that is exclusive to the U.S.
- Advancement of important U.S. national energy security policy objectives

# Environmental Costs of the Proposed Action as Determined by GLE

| RESOURCE AREA                      | IMPACT                                   |
|------------------------------------|--|
| Ecological Resources               | SMALL to MODERATE                        |
| Noise                              | SMALL to MODERATE                        |
| Transportation                     | SMALL (regionally) to MODERATE (locally) |
| Waste Management                   | SMALL to MODERATE                        |
| Water Resources                    | SMALL                                    |
| Land Use                           | SMALL                                    |
| Air Quality                        | SMALL                                    |
| Soils and Geological Resources     | SMALL                                    |
| Human Health & Occupational Safety | SMALL                                    |
| Visual/Scenic Resources            | SMALL                                    |
| Historic and Cultural Resources    | SMALL                                    |
| Environmental Justice              | SMALL                                    |
| Socioeconomics                     | SMALL                                    |

# Comparison of the Proposed Action and the No-Action Alternative

- GLE and the NRC Staff found the Proposed Action to be **preferable** to the No-Action Alternative, because the GLE Facility would:
  - Help meet future demand for enrichment services from domestic nuclear power reactors.
  - Advance national energy security policy objectives.
  - Introduce a next-generation enrichment technology that is expected to have smaller resource requirements and smaller environmental impacts.
  - Yield positive socioeconomic impacts in the region of influence and on state and federal income taxes.

# Site Selection - Qualitative Cost-Benefit Analysis

- The Wilmington Site had slightly higher net benefits than the Morris Site.
- Key factors included:
  - Existing nuclear infrastructure
  - Greater cost savings to GE
  - Smaller adverse impacts to water, air, ecology
  - Slightly higher positive socioeconomic impacts.
- No obviously superior site was identified.

# Cost-Benefit Analysis (5.C.)

- Cost-benefit analysis (CBA) catalogues, quantifies, and values in monetary terms, to the extent possible, the effects of a project or program on society's well-being.
- CBA compares the environmental costs of a project against its economic, technical, or other public benefits.

# CBA – GLE Environmental Report

- The overall CBA assessment, which treats many of the **external** costs and benefits in a qualitative manner, is presented in Chapter 7 of the ER.
- The **private** benefits and costs of the proposed GLE Facility are assessed quantitatively in proprietary Appendix U of the ER.

# CBA – Summary of Estimated Benefits

- Appendix U contains proprietary estimates of GLE specific costs and revenues for the project.
- In qualitative terms, both the **private** benefits (revenues) and costs to GLE (annual start-up, operating, and decommissioning costs) are estimated to be MODERATE.
- The **external** (public) benefits are described qualitatively and range from SMALL to LARGE. They are summarized in Table 5 of GLE's testimony, the relevant portion of which is shown on the next slide.

# CBA – Summary of External Benefits

| Cost-Benefit Category     | Description  | Scale of Impacts |
|---------------------------|--|------------------|
| <b>Benefits</b>           |  |                  |
| Energy Security           | Increases availability of domestically-produced nuclear fuel, reducing reliance on foreign sources of enriched uranium; establishes an advanced uranium-enrichment technology in the United States.                              | LARGE            |
| Enriched Uranium Produced | Estimated 6 million Separative Work Units (SWU), helps address projected SWU shortfall in United States after 2014.  | LARGE            |
| Reduced Emissions         | By allowing increased nuclear power generation, may encourage reduced emissions of criteria pollutants and greenhouse gases by fossil-fuel fired electric utility power plants.  | MODERATE         |
| Energy Efficiency         | SILEX (Separation of Isotopes by Laser Excitation) technology produces enriched uranium using less electric power than existing uranium enrichment technologies.   | MODERATE         |
| Economic Impacts          | Employment of up to 1040 during construction and start-up and 350 during operation; increases in regional income due to employee payroll and local GE-Hitachi Global Laser Enrichment LLC (GLE) purchases of goods and services. | MODERATE         |
| Tax Receipts              | Sales and income taxes due to GLE and employee spending; corporate income tax on GLE profits.  | SMALL            |

# CBA – Summary of Environmental Costs

- Environmental impacts were estimated to be generally SMALL. SMALL to MODERATE impacts were estimated for the Transportation, Noise, Ecological, and Waste Management resource areas (see slide 6).
- The Proposed Action was identified as preferable to the No-Action Alternative (see slide 7).

# Overall CBA Conclusions

- Overall growth in demand for enrichment requirements is now projected to be somewhat lower than prior to the Fukushima event and global economic downturn.
- Nonetheless, the demand is still projected to grow substantially over the next two decades.
- ERI and other forecasts (e.g., WNA) indicate that new enrichment facilities, including the GLE Facility, are needed to avoid a enrichment services shortfall at some point during the period 2016 through 2035.
- The national policy and commercial benefits of having diverse, reliable, and advanced U.S. enrichment capabilities further reinforce the need for the GLE Facility.

# Impact of Delay in Preconstruction Activities (5.E.)

- GLE does not intend to compress the construction schedule to offset potential project delays.
- Therefore, environmental impacts of construction activities will not increase on an annual basis.

# GLE Facility Electrical Requirements (5.F)

- Progress Energy has sufficient capacity to meet the GLE Facility's expected electricity needs.
- Progress Energy will provide upgrades to existing feeder line and terminals to meet GLE's needs.
- GLE and Progress Energy entered into a preliminary written agreement in February 2009 to perform related planning and preliminary design work.
- Discussions between GLE and Progress Energy continue as the GLE Facility project progresses.

# Mitigation Measures (5.G.)

- GLE will implement the mitigation measures listed in Table 5G-1 of the testimony that are required by federal, state, and local regulations.
- GLE will implement those mitigation measures that were factored into the ER's analysis of environmental impacts (*e.g.*, water spraying for dust suppression).
- To the extent practicable, GLE will implement additional mitigation measures listed in Tables 5G-1 and 5G-2 of the testimony based on consideration of specific factors.

# Key Conclusions

- GLE appropriately evaluated alternatives to the Proposed Action as required by NEPA.
- GLE's cost-benefit analysis weighed private and public benefits against environmental and private costs.
- The cost-benefit analysis indicates that the Proposed Action is preferable to the No-Action Alternative.
- The GLE Facility will serve to meet private and public needs for diverse, reliable, and advanced sources of U.S. enrichment services.
- The Fukushima event and current economic conditions do not alter these conclusions, particularly given the current uncertainties associated with other proposed U.S. enrichment facilities.