UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

RAS 13126 **DOCKETED 03/02/2007**

ATOMIC SAFETY AND LICENSING BOARD

SERVED 03/02/2007

Before Administrative Judges:

Lawrence G. McDade, Chairman
Dr. Peter S. Lam
Dr. Richard E. Wardwell

In the Matter of	Docket No. 70-7004-ML
USEC, Inc.	ASLBP No. 05-838-01-ML
(American Centrifuge Plant)	March 2, 2007

MEMORANDUM AND ORDER
(Issuing Additional Questions and Hearing Topics)

I. ADDITIONAL HEARING TOPICS RELATED TO THE SER

HTS-10. General Information: Enrichment Process (S1-1)

A. As noted in Section 1.1.3 of the SER, the NRC Staff reviewed a plant capacity of 3.5 million SWU per year with a maximum of 10% enrichment, which is based on the description of the facility in USEC's Application. The Staff reported that it would evaluate any increase in SWU capacity that USEC may request through the change process identified in 10 C.F.R. § 70.72. Describe this process and explain how the public will be allowed to participate in the revised review for increased plant capacity.

B. The NRC Staff proposed a license condition that will require USEC to provide sixty (60) days notice to the NRC before enrichment exceeds 5% U-235 in order to provide the NRC Staff time within which to verify that the process will be conducted safely and with sufficient safety margin at higher enrichments. Discuss the following: (1) the depth of the safety review for 10% enrichment that has already been conducted in preparation of the SER; (2) what additional analyses will be performed in the 60-day period allocated by the proposed license condition; (3) explain why all the processes with 10% enrichment were not reviewed for the SER; and (4) summarize the opportunities for public input, if any, during this additional review process. If their will be no opportunity for additional public input or Board review, explain through counsel why such additional input or review is unnecessary.

C. The NRC Staff discussed the storage of cylinders with > 5% enriched uranium in Appendix A: Official Use Only – DOE NOFORN Responses (p. A-2). Discuss the practicality of the verification technique that will be used at the ACP and comment on whether this should be, will be, and if so how it will be documented in the license (e.g., permit condition, tie-down reference, etc).

HTS-11. General Information: Exemption Request for Liability Insurance (S1-2)

A. In regards to USEC's request for an exemption from the requirement to obtain liability insurance (SER at 1-13), the NRC Staff responded (NRC Staff's Response at 19-20) that:

1. Pursuant to an agreement between DOE and USEC, the ACP must be constructed on land leased by USEC from the DOE reservation at either the Portsmouth Gaseous Diffusion Plant (GDP) or the Paducah GDP;

2. American Nuclear Insurers (ANI) has declined to sell insurance to USEC for the operation of the ACP on an existing DOE site, because the site for the ACP is not a new "clean" site;

3. The lease agreement between USEC and DOE provides that DOE will indemnify USEC against claims arising from nuclear incidents to the extent that USEC cannot obtain commercial insurance at reasonable rates.

Explain how DOE's indemnification meets the regulation – i.e., relieves USEC from obtaining commercially-available liability insurance – and, if no one will insure the ACP because it is not a "clean" site, why this condition does not preclude it from siting considerations. (If the NRC Staff and/or USEC conclude that all or part of this question is a legal, rather than a factual question, and that it can be more appropriately answered by counsel rather than by a witness testifying under oath, they are encouraged by the Board to adopt that approach.)

B. The Staff noted (NRC Staff Response at 22) that for certain claims, USEC has agreed in its Lease Agreement to waive certain defenses. List all the defenses that USEC has agreed to waive in the Lease Agreement, discuss how these waivers relate to claims against it, and explain how the Staff proposes that these waiver agreements will be incorporated into the license.

HTS-12. ISA and ISA Summary: Sufficiency of Review Information (S2-1)

A. The NRC Staff pointed out in its S2-1 response (NRC Staff Response at 23 n.10) that individual NRC Staff members have filed a formal Differing Professional Opinion, raising their concerns with the level of detail that was used in the ISA. The NRC Staff explained that these differing viewpoints are being addressed through NRC's formal process. Explain why this process was not allowed to be completed before issuing the SER, the regulatory history of DPOs during the licensing process, and what will happen with the ACP license process if the final conclusion on what is sufficient review information is different than what the Staff used in preparing the SER for USEC's Application. (To the degree that the NRC Staff and/or USEC conclude that all or part of this question is a legal, rather than a factual question, and that it can be more appropriately answered by counsel rather than by a witness testifying under oath, they are encouraged by the Board to adopt that approach.)

B. The NRC Staff stated (NRC Staff Response at 25) that the ISA Summary shall contain a description of "each process" (defined as a single reasonably simple integrated unit operation within an overall production line (10 C.F.R. § 70.65(b)(3)) analyzed in sufficient detail to understand the theory of its operation. The Staff then concluded that a functional-level of design information is sufficient for this review. The Staff then seemingly went on to state that, in its judgment, the description of the programmatic provisions of USEC's proposed activities are adequate for this functional review. Elaborate on what the Staff means by a programmatic review, providing multiple examples of the nature and depth of this review, as compared to a design-depth review, and specifically illustrating how this level of review meets the functional review criteria.

C. The Staff noted that in order to assure that an applicant's programs have been sufficiently implemented and that commitments have been properly applied in the final facility design and in the constructed facility, "no person may commence operation of a uranium enrichment facility until the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license." NRC Staff Response at 27 (citing 10 C.F.R. §§ 40.41(g), 70.32(k)).

1. Discuss whether there are additional opportunities for the NRC Staff to review the final design prior to construction, and, if not, explain why waiting until the ACP is being built, or has been constructed, is not too late to address design differences between the understanding at the programmatic review and that resulting from final design. See NRC Staff Response at 27, 32, and 36.

2. Explain what is meant by "samples of material prepared in a vertical slice fashion." NRC Staff Response at 29. How close does this approach come to a "100 percent review"? Id. Explain how this review approach is consistent with NUREG-1520 and NUREG-1513.

3. Elaborate on the degree to which other regulations in 10 C.F.R. Part 70 "apply to licensing review under Part 70" (NRC Staff Response at 30) and explain why the NRC Staff concluded that they "do not directly pertain to the required level of detail needed in performing a licensing review." Id. (If the NRC Staff and/or USEC conclude that this question is primarily a legal, rather than a factual question, and that it can be more appropriately answered by counsel rather than by a witness testifying under oath, they are encouraged by the Board to adopt that approach.)

4. In regards to the applicability of the LES Board's decision as to the level of detail appropriate in the NRC Staff's review, explain any basis from which the NRC Staff concludes that the level of the depth of review was considered by the LES Board. See NRC Staff Response at 30.

5. Explain the Staff's understanding as to why the regulations do not require the ISA Summary to be part of the license. See NRC Staff Response at 32 (citing 10 C.F.R. § 70.65(b)). (This is a legal question and should be answered by counsel rather than by a witness testifying under oath.)

D. The NRC Staff stated that the "standard practice for licensing fuel cycle facilities is to directly incorporate license application documents into the license by tie-down references." NRC Staff Response at 35.

1. Will this standard practice be implemented for the ACP license, i.e. will USEC's ISA Commitments (and all the other commitments discussed in the SER and FEIS) be incorporated into the license by tie-down references?

2. Describe what these tie-down references look like and how they are presented in the licensing documentation.

HTS-13. Radiation Safety (S3)

The NRC Staff stated that while USEC requested two exemptions to the labeling requirements under 10 C.F.R. § 20.1904, only one exemption is needed; the exemption from labeling containers located in the Restricted Areas within the ACP. See NRC Staff Response at 39. As explained by the Staff in SER Section 4.3.8, 10 C.F.R. § 20.1905(c) "already exempts containers from 10 C.F.R. § 20.1904, if the containers are attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established." SER at 4-15.

A. Explain the Staff's interpretation of "containers are attended by an individual," describe the specific details of USEC's proposed program for attending the containers, and demonstrate that this program meets the pre-exemption requirements of 10 C.F.R. § 20.1905(c).

B. Elaborate on the experience at other facilities that have received the labeling exemption, specifically showing how it demonstrates that USEC's request will provide an equal amount of safety and will not result in an undue hazard to individuals. See NRC Staff response at 43.

II. ADDITIONAL HEARING TOPICS RELATED TO THE FEIS

HTE-4. Final Balance Among Conflicting Factors

. Explain how the national energy security is improved by providing increased domestic supplies of enriched uranium when (1) the majority of the capacity is replacing the Paducah plant, and (2) there is no guarantee that any of the enriched uranium will be used to fulfill domestic needs.

HTE-5. Liquid Effluent Control System

In regards to the Board's question E3(B), please address the following:

A. Excluding the Liquid Effluent Collection (LEC) System, are there any other underground liquid storage tanks, drains, or underground piping associated with the ACP that have the potential to contain radioactive fluids, which, if they leaked, would cause an

inadvertent release of radionuclides to the environment. See NRC Staff Response at 62.

B. Explain how the level gauges on the underground tanks of the LEC System will have the accuracy and sensitivity to detect small leaks and weeps from the container. See NRC Staff Response at 63.

C. Elaborate on how the LEC System will collect the leaks and weeps from the recirculating heating water, machine cooling water, tower cooling water, and fire protection water systems. Discuss the potential for leakage from these, or other systems that contain radioactive fluids, to bypass the LEC System, seep into the ground, and impact the groundwater. What systems are proposed to monitor the LEC System to verify that inadvertent releases are not occurring? See NRC Staff Response at 63.

D. The NRC Staff stated that the relative contribution of radionuclides from the ACP in the NPDES-permitted outfalls would be small compared to the releases from other portions of the Portsmouth reservation. Is it fair to conclude that monitoring the outfalls is not an effective means to detect inadvertent releases of radionuclides from the ACP? What measures are proposed by USEC to detect any releases, and will there be a plan in place to investigate and remediate any unanticipated releases? See NRC Staff Response at 64.

E. Explain the tie-down references used to directly incorporate license application documents, including the ER, into the license, and verify how this will be done at the ACP. See NRC Staff Response at 65, 69.

HTE-6. Cost-Benefit Analysis

Prepare a presentation (no longer than 45 minutes) describing the details of the cost-benefit analysis performed by the NRC Staff. Provide summaries of the raw data for the costs and benefits presented in the sources referenced in the NRC Staff's Response at page 69 and how it relates to the final analysis and its conclusions. In addition address the following:

A. The Staff stated that "there are no statutory or regulatory requirements prohibiting the sale of enriched uranium produced in the U.S. for peaceful use in foreign countries." NRC Staff Response at 70. Discuss the rationale for stating that one of the benefits of the ACP is to meet the need for enriched uranium to fulfill domestic electricity requirements (FEIS at 7-4).

B. As stated by the NRC Staff, USEC estimated that 53% of its production would be purchased by and shipped to North America utilities and its world market share would be 27%. Explain how these figures were determined and whether these figures are consistent with the values considered by the Staff in its cost-benefit analysis?

C. How would the conclusions in the FEIS change with the NRC Staff's recognition that the impacts indicated in Table 2-8 for the no action alternative should be small for Public and Occupational Health and for Waste Management. See NRC Staff Response at 73; FEIS at 2-60 to 61.

D. Explain in detail how the cost benefit analysis for the ACP would change if, in fact, none of the enriched uranium went toward fulfilling domestic electricity requirements.

III. ADDITIONAL QUESTIONS RELATED TO THE SER

S4-1. Nuclear Criticality Safety (NCS)

Discuss how USEC's commitment for measuring criticality control can be incorporated into its license. See App. A: Official Use Only - DOE NOFORN Responses at 23.

S7-1. Environmental Monitoring

A. If available, provide a schematic of the Machine Cooling Water (MCW) system. See NRC Staff Response at 50.

B. While a closed loop system, what is the operational history of the cooling interfaces maintaining their integrity and not leaking liquid with radionuclides from the pumps and listed assemblies into the piping of the MCW system. See NRC Staff Response at 50.

C. What are the options for offsite disposal of LEC system fluid that does not meet the requirements of 10 C.F.R. § 20.2003. See NRC Staff Response at 51.

S8-1. Decommissioning

What criteria will the NRC Staff use to assess whether decommissioning is occurring promptly enough to assure that the license can be terminated shortly after cessation of operations? See NRC Staff Response at 52.

IV. ADDITIONAL QUESTIONS RELATED TO THE FEIS

E1-1. Balancing of Factors

The NRC Staff noted that job losses at Paducah "would be temporarily mitigated by the hiring of decommissioning workers in the event that the Paducah plant is decontaminated and decommissioned." NRC Staff Response at 57. In what circumstances would the Paducah plant not be decontaminated and decommissioned?

E3-1. Site Monitoring

The NRC Staff stated that "[m]aintenance activities would include periodic inspection for corrosion, valve leakage, or distortion of cylinder shape." NRC Staff Response at 61. Also, the Staff represented that "[b]ecause the UF-6 cylinders would be stored on an impervious surface, would be maintained and inspected routinely, and all runoff water would be collected and directed to an existing holding pond that is routinely analyzed for radionuclides, soil and geology would not be impacted by the operation of a storage yard." Id.

A. Elaborate on the extent and frequency of USEC's proposed inspection program.

B. Describe how any runoff is collected and the type of conveyances used to direct the liquid to the holding ponds.

E7-1. Additional Environmental Questions

A. Why were the 2002 dose values for airborne emissions that were prepared for the Portsmouth Annual Environmental Report not updated for the application? See NRC Staff Response at 87.

B. What is the current peak stormwater flow? What is the percent of increase caused by the additional 74 cfs of runoff flow with the new cylinder yard? What criteria did the NRC Staff use to conclude that a stormwater detention pond would not be required? What is the peak flow downstream of the existing holding pond, before and after construction of the cylinder yard? See NRC Staff Response at 90.

C. Is the centimeter dimension for the heeled cylinders a length, radius, a diameter, or other? See NRC Staff Response at 92-94.

V. CONCLUSION

The Board is not directing that the NRC Staff or USEC submit any written response to this Order. Rather, we anticipate that the parties will address the matters set out in this Order orally at the hearing. However, if the parties believe that a written submission will materially aid the Board's understanding of these issues, they may file written presentations.

If either the NRC Staff or USEC desire clarification of any aspect of this Order, they should ask the Board to schedule a Pre-hearing Conference at which their questions can be addressed.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD[1]

/RA/

Lawrence G. McDade, Chairman
ADMINISTRATIVE JUDGE

Rockville, Maryland
March 2, 2007

[1] Copies of this Memorandum and Order were sent this date by Internet e-mail transmission to (1) Counsel for the NRC Staff and (2) Counsel for USEC.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USEC Inc.	)	Docket No. 70-7004-ML
	)	
	)	
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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMORANDUM AND ORDER (ISSUING ADDITIONAL QUESTIONS AND HEARING TOPICS) have been served upon the following persons by U.S. mail, first class, or through NRC internal distribution.

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[Original signed by Adria T. Byrdsong]
Office of the Secretary of the Commission

Dated at Rockville, Maryland,
this 2nd day of March 2007