March13, 1996

FOR: The Commissioners

FROM: James M. Taylor /s/
Executive Director for Operations

SUBJECT: STATUS OF CERTIFICATION OF THE U. S. ENRICHMENT CORPORATION'S GASEOUS DIFFUSION PLANTS

PURPOSE:

To inform the Commission of the status and schedule of the certification of the U. S. Enrichment Corporation's (USEC's) gaseous diffusion plants (GDPs).

BACKGROUND:

The Energy Policy Act of 1992 (the Act) amended the Atomic Energy Act of 1954 to establish USEC for the purpose of leasing and operating the uranium enrichment enterprise owned and previously operated by the U.S. Department of Energy (DOE EXIT). The Act provided that within two years after enactment of the legislation, the Nuclear Regulatory Commission was to promulgate standards for the two operating plants to protect the public health and safety from radiological hazards and to provide for the common defense and security. In September 1994, NRC issued 10 CFR Part 76, which specified the standards and certification process for the two GDPs, located at Portsmouth, Ohio, and Paducah, Kentucky.

The certification process calls for NRC's certification of the USEC's compliance with Part 76, based on the staff's review of USEC's application and compliance plan submittals. The application for each GDP must describe how USEC will comply with NRC's safety, safeguards, and security requirements. Each compliance plan, which is to be prepared by DOE and submitted by USEC, describes how and when the plants will be brought into compliance with NRC requirements in instances where compliance is lacking at the time of certification. The compliance plan sets forth the safety and safeguards basis, including compensatory actions, that justifies continued operation until compliance is achieved.

Following the initial applications that were rejected by the staff in May 1995, USEC submitted substantially revised applications on September 15, 1995. The corresponding compliance plans were submitted on November 7, 1995. Note that the DOE compliance plan was accompanied by a USEC letter with various unexpected USEC comments and exceptions to the DOE plan. DOE currently regulates the plants, and will continue to do so until NRC assumes jurisdiction following a planned 120-day transition period after the initial certification.

DISCUSSION:

1. Review of USEC Certification Application and Resolution of Issues

The staff began an expedited review upon receipt of USEC's revised certification applications in September 1995, arranging numerous meetings and exchanging correspondence with USEC and DOE. The staff originally projected the initial certification to be completed by February 29, 1996, but that schedule was delayed (as discussed in SECY-95-279) to resolve such issues as worker protection, quality assurance requirements, technical safety requirements, DOE-owned material in USEC-leased space, elevated enrichment levels, seismic safety, and upgrade of the safety analysis report and implementation of its findings for both GDPs. Also, USEC has taken longer than originally projected to prepare revised submittals in response to NRC staff comments. Additional discussion of significant issues is provided in the Attachment. For some of the issues, the USEC and NRC staffs have reached oral understandings in meetings, subject to USEC submittal of written revisions to the application for verification and approval by the NRC staff. However, some of the issues require further discussion with USEC, and the staff is making every effort to expedite resolution.

2. Public Comments and Coordination with Other Government Agencies

The NRC staff used several means to publicize the certification process, obtain public comments, and coordinate with other interested government agencies. These means included: publication of Federal Register notices providing separate 45-day public comment periods for the certification application and for the compliance plan, establishment of local public document rooms near each site, press releases, notices of technical meetings with USEC open to the public in accordance with NRC policy, paid advertisements in local newspapers, transcribed public meetings at each site, media interviews, individual letters seeking comments from interested parties, meetings with labor union representatives, and meetings with State officials, local officials, DOE, the Environmental Protection Agency (EPA EXIT), and the Occupational Safety and Health Administration (OSHA EXIT).

The staff received 10 comment letters of a relatively minor nature. The subject matter of these comments had already been considered by the staff as part of its review. The written staff responses to the public comments will be provided as part of the staff's Compliance Evaluation Report (CER).

The Act specifically requires NRC to consult with the EPA regarding certification of the USEC GDPs. The staff met and held several discussions with EPA headquarters, EPA-Atlanta, which has jurisdiction over the Paducah plant, and EPA-Chicago, which has jurisdiction over the Portsmouth plant. EPA did not identify any significant issues.

The staff is in the final stages of negotiating a Memorandum of Understanding (MOU) with OSHA, to coordinate regulation of worker protection matters and avoid unnecessary duplication of effort relative to the USEC GDPs. The staff will provide a separate paper to the Commission in the near future concerning the MOU.

3. Staff Plans to Complete Initial Certification

The staff is having frequent discussions with USEC to expedite resolution of the remaining certification issues so that USEC can promptly submit final revisions to its certification application. Assuming that expedited resolution is reached, and by early April, 1996, USEC submits acceptable written revisions to the GDP applications which reflect oral understandings, the staff believes that it can promptly complete initial certification recommendations to the

Director, Office of Nuclear Material Safety and Safeguards (NMSS) for his certification decision, following consultation with the Commission. USEC is projected to submit the final version of the DOE-prepared compliance plan within 45 days after the application review process is essentially complete. The staff anticipates USEC's submittal of the DOE-prepared compliance plan in May 1996. The staff currently projects its decision to be issued in June 1996, followed by a 120-day transition period to allow NRC requirements to be implemented at each GDP. This assumes that USEC will not submit exceptions to the DOE compliance plan.

The certification decision will be based on the application, the compliance plan, and any conditions as documented in the staff's Compliance Evaluation Report, similar to a licensing safety evaluation report (SER). The NRC's determination to issue a certificate of compliance will be set out in a decision by the NMSS Director. A Federal Register notice will be issued announcing the Director's decision, and Congressional committees will be notified by letter. Interested parties (USEC or any person who previously has participated in a manner described in 10 CFR 76.62(c)) have the right to petition the Commission within 15 days requesting review of the Director's decision. DOE will continue to regulate the GDPs until NRC assumes jurisdiction at the end of the 120-day transition period.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

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Attachment: Discussion of Technical Issues

ATTACHMENT

DISCUSSION OF SOME TECHNICAL ISSUES RELATED TO CERTIFICATION

1. Worker Protection - The NRC staff has required the USEC to submit a technical safety requirement (TSR) to ensure protection of workers at the GDPs from death or serious injury from potential accidents involving uranium hexafluoride (UF6) or hazardous chemicals used in the GDP process. TSRs (similar to reactor technical specifications) define the conditions, safety limits, and the management or administrative controls necessary to ensure safe operation of the GDPs within an analyzed safety envelope. In addition, NRC staff required that worker safety be addressed in the safety analysis report (SAR) upgrade, which is a compliance plan item. In correspondence to USEC, DOE supports NRC's position on worker protection. The NRC staff has worked closely with USEC to communicate NRC's expectations on the worker protection issue, and finds USEC's recently submitted written TSR for worker protection acceptable.

2. Quality Assurance (QA) - Part 76 requires a QA program for safety systems and their support systems. The USEC's initial application did not provide adequate QA for certain safety systems, such as those concerning UF6 confinement, criticality prevention, and fire protection. The NRC and USEC will continue to meet and discuss this issue until resolution is reached.

3. Technical Safety Requirements (TSRs) - Many of the TSRs initially submitted by USEC were not acceptable. TSRs have been the subject of numerous meetings, correspondence, and communications among NRC, USEC, and DOE. Resolution has been reached on some issues, but not others, and discussions are continuing. An example of a TSR of safety concern relates to autoclave testing. Autoclaves are used to safely confine UF6 cylinder-related accidental releases while the cylinders are heated to feed their contents into the enrichment process or to carry out sampling and transfer operations. There are 13 autoclaves at Portsmouth and 22 at Paducah. The autoclaves have not been subjected to tests at accident pressures since they were initially installed. The safety concern is whether autoclaves can perform as assumed if there is an accidental cylinder-related release of UF6. At issue is the pressure level of tests, which are only a fraction of the accident pressure, and the frequency of the tests. Confirmatory tests at accident pressures were recently initiated by the USEC and are currently in progress. The NRC staff will determine final resolution of this matter after the complete test results are submitted and reviewed. Depending upon USEC's resolution of this matter, it will be addressed in a revision to the application and/or compliance plan.

4. DOE-Owned Material in USEC-Leased Space - For many years, certain DOE-owned materials have been stored in parts of several process buildings at both GDPs. These materials include both radioactively contaminated wastes and potentially salvageable equipment and materials. In some cases, the quantities of uranium are undetermined. The NRC staff has reviewed the USEC/DOE proposal for storage of the materials, and has unresolved concerns regarding the accountability responsibilities of USEC and DOE. Further discussions are being held to resolve the issue. Depending on the resolution, the matter will be addressed in a revision to the application and/or compliance plan.

5. Elevated Enrichment Levels - The USEC has requested certification at uranium enrichment levels of 10 percent or less, and by doing so avoids the more stringent criticality protection and safeguards (physical security and material control and accounting) requirements accompanying possession of highly enriched uranium (HEU). Currently, unplanned enrichment in small amounts between 10-20% percent recently occurred in the process at the Portsmouth GDP, caused by both USEC process enrichment and DOE down-blending of HEU. The USEC is working with DOE to modify the processes and HEU down-blending such that material in the USEC enrichment process does not exceed 10 percent. This issue is anticipated to be resolved prior to the initial certification decision. However, if NRC assumes regulatory jurisdiction, and uranium enrichment is 10 percent or more, USEC may be subject to NRC's imposition of more stringent criticality and safeguards requirements that apply to higher enriched material. Depending on the USEC/DOE resolution of this issue, it will be addressed in a revision to the application and/or compliance plan.

6. Seismic Safety - In 1995, the DOE identified structural weaknesses and uncertainties, in the Paducah GDP, suggesting that the plant does not have seismic capacity consistent with the current DOE safety basis. Currently, the DOE and USEC evolving resolution of the seismic matter calls for the USEC to implement compensatory measures for ensuring the safety of continued GDP operation, while carrying out plant structural modifications to raise the seismic capacity to that called for in the current GDP safety basis. This matter will not be resolved by the time of initial certification, and therefore will be treated as a compliance plan item. As a minimum, the USEC will be required to: (1) modify the GDP as required to meet the DOE current safety basis, (2) continue plant compensatory measures for safe operations until structural modifications are complete, and (3) provide a documented safety rationale justifying continued operation of the GDP. Currently, the NRC staff is reviewing the DOE/USEC resolution of this matter as it evolves.

7. Upgrade of the Safety Analysis Report (SAR) - Since 1985, DOE initiated various efforts to correct errors, address weaknesses, and reduce uncertainties in the existing SAR for each GDP, with a currently scheduled completion date of February 1997. The staff is requiring that, within 6 months after DOE issuance of the upgraded SARs and any associated findings, USEC must review and submit them to NRC, along with proposed resolutions of findings and any proposed certificate amendments. The upgraded SARs will be reviewed and approved by NRC and then will constitute

the operating safety bases for each GDP. This matter is a compliance plan item. Note that because the updated SAR is required to achieve initial compliance, the staff does not plan to apply 10 CFR Section 76.76, Backfitting, to implementation of the upgraded SAR or related safety findings