

July 19, 2005

MEMORANDUM TO: William M. Dean, Assistant for Operations
Office of the Executive Director for Operations

FROM: Robert C. Pierson, Director **/RA/**
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Subject: July 27, 2005, PRESENTATION TO THE NUCLEAR FUEL
SUPPLY FORUM

In accordance with Management Directive 3.9 and subsequent OEDO guidance, information is provided below regarding a presentation to be made at the Nuclear Fuel Supply Forum which will be conducted at the Willard Inter-Continental Hotel in Washington, DC. The information does not involve policy issues. The information is for your transmittal to Commissioner Assistants, for information. I was asked to be a speaker at this forum without sufficient time to prepare the talk and provide it to the EDO for information in a timely manner, but despite this late invite I chose to accept the invitation in the interest of improving our stakeholder communications and interface.

Meeting: Nuclear Fuel Supply Forum
Place: Washington, DC
Date: July 27, 2005
Author: Robert Pierson
Title: "NRC Licensing Activities for Fuel Cycle Facilities"

cc:
Martin J. Virgilio, NMSS
Margaret V. Federline, NMSS
Jack Strosnider, NMSS

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OFC	FCSS	
NAME	RPierson	
DATE	7/ 19 /05	

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NRC Licensing Activities for Fuel Cycle Facilities

Thank you for the invitation to speak to you today. By way of a quick introduction, I am the Director of the Division of Fuel Cycle Safety and Safeguards at the U. S. Nuclear Regulatory Commission. My Division is responsible for the licensing of the facilities in the United States which process uranium to convert it from yellowcake to fuel for a nuclear power plant.

There are several things which I would like to discuss today to give you an understanding of some of the things we've done and some of the challenges which we see ahead of us. Is NRC ready to address any fuel cycle industry growth without impacting current fuel cycle industry needs? Perhaps I should just say yes to that question and sit down, but since I have an opportunity to provide some context I'll take advantage of that opportunity and tell you why I think the answer is yes.

Uranium Recovery Licensing Status

Let me start with where our program begins, the mining and milling of uranium. All told we provide regulatory oversight to 16 uranium recovery license: ten conventional mills in remediation; one conventional mill in standby; two operating in-situ leach mining facilities; one in situ leach mining site in standby; one in situ leach mining site which is in remediation; one conversion facility in operation (Honeywell) and one in decommissioning (Sequoyah Fuels Corporation uranium conversion facility). The US's last uranium conversion facility at Metropolis, Illinois serves a critical function in converting uranium yellowcake to uranium hexafluoride. The site is currently seeking a 10 year renewal of their license.

Despite all the decommissioning and remediation which we oversee, we have noticed an optimism in this sector which wasn't evident before. As most of you probably know the price of yellow cake uranium has increased substantially over the last year or so and now appears to be hovering at just below the \$30 per lb level. Recently we approved an application from Power Resources, Inc. to operate a new satellite in-situ leach facility. This action included a first-of-its-kind Programmatic Agreement between NRC, the State of Wyoming, the Bureau of Land Management, and Power Resources, Inc. regarding the protection of historic properties. To me, investor confidence in the uranium mining industry is probably one of the clearest indicators that nuclear power is poised for a renaissance. Our key challenge in this area is resolving complex ground-water issues associated with ground water corrective action plans and alternate concentration limits.

Fuel Cycle Licensing

We oversee the licensing activities for eight special nuclear materials facilities: six fuel fabrication facilities and two gaseous diffusion enrichment facilities. There is a high level of activity for licensing and project management in support of maintaining a viable domestic fuel supply. Our principle current activity to support our special nuclear materials licensees is reviewing the site-wide Integrated Safety Analysis summaries which the six 10 CFR Part 70 licensees have submitted for staff review. On October 18, 2004 the 10 CFR Part 70 upgrade requirement in Subpart H for fuel cycle licensees' safety programs including integrated safety analysis were required to be fully implemented by these existing special nuclear material licensees. We are scheduled to complete these reviews by February 2006. To address the issues we have encountered in implementing this regulation we have conducted three

workshops with interested stakeholders. These workshops, held in September 2003, July 2004 and February 2005 have helped us to work with stakeholders to achieve regulatory clarity, fairness and consistency. As part of this process we have also worked with stakeholders to develop staff guidance for supplementing the Standard Review Plan which describes to the staff the manner in which we need to apply the regulation. This guidance which we refer to as Fuel Cycle Interim Staff guidance, or FCSS ISGs, has been developed in close coordination with our stakeholders and this interim guidance has been the subject of several of these stakeholder meetings. We plan to schedule another meeting in the late fall on additional interim staff guidance. We believe that implementing this regulatory change and incorporating an Integrated Safety Analysis for the special nuclear materials licensees will significantly streamline the regulatory oversight of these facilities, allowing us to focus on the risk significant aspects of these facilities.

Also included in fuel facility licensing are our two 10 CFR Part 76 sites, the Portsmouth and Paducah Gaseous Diffusion Plants. Certificates for each of the GDPs must be applied for at least every five years. The renewed certificates were last issued by the NRC in December of 2003 and these renewed certificates will expire on December 31, 2008. Currently only the Paducah site is actively enriching product, while the Portsmouth site although not actively engaged in enriching product is in Cold Standby in the event additional enrichment capacity is needed.

New Applications

As some of you no doubt know we are currently in the process of conducting the licensing review of gas centrifuge applications.

USEC Lead Cascade Facility

The first gas centrifuge review we conducted was for USEC's Lead Cascade Facility. This facility will serve as a demonstration facility for USEC's American Centrifuge design and will provide reliability information on the centrifuge machines and auxiliary systems as they would be used in commercial operations. The Lead Cascade Facility application was received in February 2003 and NRC issued Materials License SNM-7003 to USEC Inc, in February 2004. The facility will be built at the Portsmouth gaseous diffusion plant site in Piketon, Ohio and will consist of a number of operable centrifuges with a total possession limit of 250 kg of UF₆. The only uranium withdrawals from the cascade will be in the form of samples. All enriched product will be downblended to natural uranium, since the facility is not licensed to produce enriched uranium.

LES (National Enrichment Facility (NEF))

In December 2003, NRC received an application for the National Enrichment Facility to be built in Eunice, New Mexico. This facility is being designed for a capacity of 3 million SWU per year capability; up to 5% enrichment. On January 30, 2004, the Commission issued an order initiating the LES licensing proceeding. The Commission ordered the use of the new Part 2 hearing procedures and a 30-month schedule for making a final Agency determination. The order also offered an opportunity for the public to petition to participate in the hearing. NRC Staff received three petitions to intervene in the hearing. Petitions were submitted by: (1) the New Mexico Environment Department; (2) the New Mexico Attorney General, and (3) Nuclear Information and Resource Service (NIRS) and Public Citizen (combined petition). All petitioners were granted standing. In July 2004, the ASLB admitted contentions in the areas of LES'

proposed radiation program, disposal cost estimates, impacts on ground and surface water, impact on water supplies, depleted uranium storage and disposal, decommissioning costs, need for the facility, and natural gas pipeline accidents. Several of these contentions were referred to the Commission for further review. On August 18, 2004, the Commission issued an Order dismissing four of the contentions referred to it because the contentions did not meet the late-filed contention criteria. The Commission also requested briefs on the issue of whether depleted uranium is a low-level radioactive waste. In October 2004, Nuclear Information and Resource Services and Public Citizen made a motion to amend and supplement its contentions in the areas of ground and surface water impacts, water supply impacts, depleted uranium storage and disposal, depleted uranium conversion impacts, decommissioning costs, depleted uranium disposition costs, and need for the facility. Also, the New Mexico Environment Department submitted late-filed contentions in the areas of disposition of depleted uranium, storage of depleted uranium, and the waste classification of depleted uranium. Most recently, on June 8, 2005, the U.S. Nuclear Regulatory Commission's (NRC's) Atomic Safety and Licensing Board (ASLB) issued its decision on four environmental contentions heard in the evidentiary hearing in February 2005. These were the contentions raised by Nuclear Information and Resource Services and Public Citizen and addressed impacts of ground water and surface water, impact on water supplies, impacts of deconverting depleted uranium, and the need for the facility. The ASLB ruled in favor of Louisiana Energy Services and/or NRC staff. That is, the ASLB decided that: (1) LES and NRC staff adequately addressed ground water and surface water impacts; (2) LES and NRC staff adequately addressed impacts to water supplies; (3) LES and NRC staff adequately addressed impacts from deconversion of depleted uranium; and (4) LES reasonably addressed the need for the facility. The Final Safety Evaluation Report and the Final Environmental Impact Statement were both issued on June 15, 2005. The ASLB hearing on technical issues is scheduled for September 2005 with completion scheduled for February 2006. We expect a licensing decision in June 2006.

MILESTONES

Action	Date
Issue RAIs for application	April 19, 2004 Complete
Issue EIS scoping summary report	April 23, 2004 Complete
Complete technical review of ER, issue RAIs	April 29, 2004 Complete
LES response to application RAIs	May 19, 2004 Complete
LES response to ER RAIs	May 20, 2004 Complete
Issue draft EIS for public comment	September 2, 2004 Complete
Conduct EIS public meetings	October 14, 2004 Complete
EIS public comment period ends	January 7, 2005 Complete
Issue Final EIS	June 15, 2005 Complete
Issue Final SER	June 15, 2005 Complete
ASLB hearing on technical issues	September 2005
Licensing decision	June 2006

USEC Inc. (American Centrifuge Plant (ACP))

In August 2004 NRC received the license application for USEC's commercial-scale gas centrifuge facility, the American Centrifuge Plant, which is to be built at the Portsmouth Gaseous Diffusion Plant site in Piketon, OH. It will absorb the lead cascade facility and is being

designed for a capacity of 3.5 million SWU per year, with up to 10% enrichment. As part of their application request USEC Inc. requested the NRC to complete its review in 24 months based on NRC's existing understanding and knowledge of the Lead Cascade facility. On October 7, 2004, the Commission issued an Order accepting USEC Inc.'s license application and environmental report for detailed technical review. The Order included a 30-month milestone schedule for the NRC review and final decision. Currently the NRC staff is on schedule to meet these timelines and we expect to issue the final EIS and SER sometime in early calendar year 2006 with an expected licensing decision to follow about one year later.

MILESTONES

Action	Date
Receive USEC's application	August 23, 2004 Complete
Issue acceptance/rejection letter	September 21, 2004 Complete
Conduct EIS scoping meeting	January 18, 2005 Complete
Complete safety/safeguards review and issue RAI	February 7, 2005 Complete
Complete environmental review and issue RAI	February 23, 2005 Complete
Receive USEC response to safety/safeguards RAI	March 9, 2005 Complete
Receive USEC response to environmental RAI	April 27, 2005
Issue EIS scoping summary report	April 28, 2005 Complete
Issue draft EIS for public comment	Fall 2005
Conduct draft EIS public meeting	Fall 2005
Publish final SER	Fall 2005
Publish final EIS	Spring 2006
ASLB decision	Fall 2006
Commission decision	Late CY 2006

MOX

In March 30, 2005, the U.S. Nuclear Regulatory Commission (NRC) issued a construction authorization (CA) to Duke Cogema Stone & Webster (DCS) for a mixed oxide fuel fabrication facility (MFFF) to be located at the Savannah River Site in South Carolina. The purpose of the MFFF is to implement a September 2000 U.S.-Russian Federation agreement for each side to disposition 34 metric tons of plutonium that has been declared excess to its national defense needs. The 2000 agreement is being implemented by the DOE's National Nuclear Security Administration through its Surplus Plutonium Disposition Program. DCS is a U.S. Department of Energy (DOE) contractor. MOX fuel manufactured at the MFFF would be irradiated in U.S. commercial nuclear power plants, thereby converting it to a proliferation-resistant form. The final EIS was issued in January 2005 and in March of 2005 NRC granted the DCS request to construct the proposed MOX facility through issuance of the Construction authorization Request. No further actions are required by the NRC before construction can begin on the MFFF.

The CA is the first of two approvals DCS must obtain before it may manufacture MOX fuel at the MFFF. No further actions are required by the NRC before construction can begin on the

MFFF. Before DCS may possess and use NRC-licensed material at the MFFF (including special nuclear material), it must submit, and NRC must later approve, a license application. NRC expects to receive a license application from DCS later this year.

Fuel Cycle Inspection Program

Beginning in 2004 the fuel cycle inspections were consolidated to Region II from Region III and Region IV. Criticality safety inspections are still conducted from headquarters within my division in the Office of Nuclear Material Safety and Safeguards while the material control and accounting (MC&A) inspections were moved to the new Office of Nuclear Security and Incident Response. Inspections provide assurance that licensees maintain control and accountability of material, avoid criticalities, limit events resulting in exposure, and limit environmental releases. We believe the program has successfully transitioned to consolidation in Region II. Current initiatives in the inspection area include revising the fuel cycle inspection procedures to make them more risk informed, revising the Inspection Manual Chapter 2600 (the guidance for conducting fuel facility inspections) to reflect the new 10 CFR Part 70 safety focus and incorporating the new 10 CFR Part 70/ISA regulatory guidance into inspection procedures and enforcement guidance.

Summary

The NRC's strategic and performance goals include safety and security, public confidence/openness, effective regulation and management excellence. By using these performance goals to provide the framework for our regulatory oversight, we believe we can continue to provide the safety oversight needed to support a viable domestic nuclear fuel option in the United States. In summary I believe we are, and will continue to successfully address the unique challenges posed by the fuel cycle safety programs we oversee and we will be able to support any new licensing challenges in an efficient and timely manner.