February 24, 2006

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
LOUISIANA ENERGY SERVICES, L.P.	)	Docket No. 70-3103
	)	
(National Enrichment Facility)	)	ASLBP No. 04-826-01-ML
	)	

NRC STAFF PRE-FILED MANDATORY HEARING TESTIMONY REGARDING FINANCIAL ASSURANCE

Q.1. Please state your name, occupation, by whom you are employed and your professional qualifications.

A.1. (TJ) My name is Timothy C. Johnson. I am the U.S. Nuclear Regulatory Commission (NRC) Project Manager overseeing the licensing of the proposed Louisiana Energy Services, L.P. (LES) uranium enrichment facility near Eunice, New Mexico. I have been the PM for the project since its inception in January of 2002, when LES initiated discussions with NRC for the project. A statement of my professional qualifications is attached.

A.1. (CD) My name is Craig Dean. I am employed as a consultant by ICF Consulting. I am providing this testimony under a technical assistance contract with the NRC. A statement of my professional qualifications is attached.

Q.2. Please describe your current job responsibilities in connection with the NRC Staff's review of the application by Louisiana Energy Services, L.P. (LES) to construct and operate a uranium enrichment facility in Lea County, New Mexico, to be known as the National Enrichment Facility (NEF).

A.2. (TJ) As Project Manager, my current job responsibilities include coordinating the review of the application for construction and operation of the proposed uranium enrichment

facility submitted by LES and the preparation of the Safety Evaluation Report (SER) that documents the safety review prepared by NRC staff. In the review of the application, I focused particularly on the decommissioning funding and waste management aspects of the proposed facility.

A.2. (CD) I have assisted the NRC Staff in evaluating the proposed decommissioning funding plan for the NEF and was the principal author of the funding mechanism section of Chapter 10 of the Staff's Safety Evaluation Report, NUREG-1827, which evaluated the adequacy of LES's decommissioning funding plan.

Q.3. What is the purpose of your testimony?

A.3. (TJ, CD) To address the following question presented by the Board in the January 30, 2006 Order concerning decommissioning funding:

> The Commission has directed the staff to investigate whether amendment of 10 CFR Part 61 is required to properly address the issue of disposal of depleted uranium from an enrichment facility. In the context of its decommissioning funding plan, LES will be providing a surety, in the form of a bond, covering all decommissioning costs expected during the term of that bond, The size of that bond will be determined *a priori* upon the basis of conditions at the time of issuance or renewal. The current sizing of that bond is proposed to be based upon near-surface disposal of depleted uranium. If the Commission determines, at a future date, that near-surface disposal of depleted uranium from an enrichment facility such as the NEF is no longer appropriate, how will the bond be modified to accommodate the accompanying change in decommissioning costs? What mechanisms will be put in place at the issuance of the license to ensure that LES, which is a "single purpose" entity with no assets outside its ownership of the NEF, has the wherewithal to, and actually provides, the increased bond amount?

Q.4. What is your response to the Board's question?

A.4. (TJ, CD) Under 10 CFR 70.25(a)(1), a uranium enrichment facility is required to provide a decommissioning funding plan (DFP) to provide reasonable assurance that adequate funds will be available for decommissioning the facility. The DFP consists of a site-specific cost

estimate for decommissioning and a certification that financial assurance has been provided in the amount of the cost estimate accompanied by a signed financial assurance instrument meeting the requirements of 10 CFR 70.25(f) covering the amount of the cost estimate. DFPs are required to be updated at least every three years.

NRC staff reviews the DFP in accordance with its guidance in NUREG-1757, "Consolidated NMSS Decommissioning Guidance," LES Exhibit 125-M, to ensure that the site-specific cost estimate is reasonable. This review assumes routine operations at the facility and is based on comparing applicant or licensee decommissioning cost information with NRC cost estimating guidance, e.g., NUREG/CR-6477, "Revised Analyses of Decommissioning Reference Non-Fuel-Cycle Facilities," Staff Exhibit 38. Changes in unit costs and costs related to operational changes are expected to be included in the periodic cost estimate updates required under the regulations. Finally, at the time of decommissioning, the licensee must prepare a detailed and comprehensive decommissioning cost estimate addressing conditions at that time and to adjust its financial assurance accordingly.

The goal of the decommissioning financial assurance requirements is to ensure that reasonable assurance exists to properly decommission a facility even if the licensee is unable to perform or complete the decommissioning. Thus, the licensee is under a continuing obligation to fully fund its decommissioning financial assurance so that decommissioning can be performed in a manner that is protective of public health and safety regardless of changes in the regulatory requirements for decommissioning, changes in the decommissioning cost estimate, and/or changes in the licensee's financial condition.

Under normal circumstances, the licensee will have internally accumulated or have the ability to borrow sufficient funds to perform the decommissioning during its operational lifetime. If the licensee chooses to use a guarantee method for its financial assurance instrument (e.g., letter of credit, surety bond, etc.), but possesses or borrows sufficient funds to carry out

decommissioning, it may never be necessary to draw upon the instrument. If, however, the licensee is unable to complete decommissioning, the funding provided through a guarantee instrument may be needed to pay for a third party to complete the decommissioning.

If a licensee follows the NRC guidance for preparing decommissioning cost estimates and provides a financial assurance instrument in accordance with the regulations and the applicable NRC guidance, it is unlikely that the actual decommissioning costs will be substantially exceed the amounts available from decommissioning financial assurance, including a contingency of at least 25 percent of the total decommissioning cost estimate.

Since the decommissioning financial assurance regulations were implemented in 1988, only a small number of licensees have not been able to come into full compliance. See SECY-03-0161, 2003 Annual Update–Status of Decommissioning Program, Staff Exhibit 52-M. This small group of licensees had large quantities of contaminated materials on-site prior to 1988, and in some cases had suspended operations and/or discovered areas of soil or groundwater contamination or other site-specific problems that led to substantial increases in the estimated cost of decommissioning. These licensees are being handled on a case-by-case basis, including a phased decommissioning approach, exploration of restricted release as the decommissioning option, federal and state funding, and funding by successor owners of the property. For the other materials licensees, actual decommissioning experience has not shown that there are large gaps between actual decommissioning costs and the amounts set aside under the decommissioning financial assurance requirements. In addition, NRC has not observed any unusually large or unexpected increases in projected decommissioning and disposal costs that could result in corporate failures or failures to remain in full compliance with the financial assurance requirements.

If the Commission amends its regulations and those changes would increase the decommissioning cost basis in a decommissioning funding plan, any licensees affected by

these changes would be required, under the existing regulations, to modify their decommissioning cost estimates and financial assurance instruments to account for the changes in the regulations. Changes to bonds would normally be executed by riders or amendments to the existing instrument. Because the existing regulations require LES to have a decommissioning funding plan and to periodically update the cost estimate and amount of the financial assurance instrument, no additional requirements would need to be added in the license. The financial assurance regulations apply to all applicable licensees regardless of its corporate structure and whether or not it is a "single purpose" licensee.

The issue of how NRC's financial assurance regulatory framework should address intervening events, which could include premature closure as well as major releases, contamination discovered on-site, and regulatory changes that increase decommissioning costs has been a recurrent topic in NRC rulemaking activities, and a summary of previous thinking may help illuminate the way the agency addresses it. Similar concerns have been expressed about nuclear power reactor decommissioning financial assurance. The question of what assurance is sufficient was extensively debated within the agency during the development of the financial assurance requirements for nuclear power reactors during the late 1970s and early 1980s. One alternative was discussed in 1981 in the "Draft Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG-0586, Staff Exhibit 53-M, which stated at page 15-7:

> The nuclear facility licensee has the responsibility for completing decommissioning in a manner which protects public health and safety. Satisfactions of this objective requires that the licensee provide a high degree of assurance that adequate funds for decommissioning will be available at the end of facility operation. Because of the possibility of premature closure of the facility, financial assurance provided by the licensee must also contain a mechanism enabling funds for the full cost of decommissioning to be made available at any time during facility operation.

However, the criterion adopted was reasonable assurance, which in practice meant

something less than full up-front funding. The Staff's reasoning behind this determination was described in NUREG-0584, Assuring the Availability of Funds for Decommissioning Nuclear Facilities, Revision 3, March 1983, Staff Exhibit 55-M at p. 5:

> Traditionally, the Commission has used the standard of "reasonable assurance" in its financial qualification reviews as well as for other public health and safety issues. This standard should remain applicable to establishing the proper degree of assurance for funding decommissioning. The staff does not believe that absolute assurance is attainable, let alone cost effective.

This position was based in part on technical studies performed for the Commission suggesting that fully funding decommissioning nuclear power plants at the beginning of a plant's life would be much (approximately three times) more costly than funding at the time of decommissioning using an inflation rate of 7.4 percent and a 2 percent real discount rate. Utilization of a sinking fund was identified as a compromise alternative as it would be substantially less expensive, approximately twice as expensive as funding at the time decommissioning, but would still provide assurance that at least part of the funding would be available throughout the plant's life. Temple, Barker & Sloane, Inc., NUREG/CR-1481, Financing Strategies for Nuclear Power Plant Decommissioning, July, 1980, Staff Exhibit 56-M, p. v.; Section IV Findings, Cost.

Allowing decommissioning funding to build up over time was the approach adopted in 10 CFR 50.75 in 1988. In 1992, however, the Commission returned to the issue to address the situation of reactors that did not operate for their full expected operating lives, amending the regulations to require the NRC to evaluate decommissioning funding plans for power reactors that shut down prematurely on a case-by-case basis. 57 Fed. Reg. 30383-30387 (July 9, 1992), Staff Exhibit 57-M. In cases of potential premature shutdown, the Commission stated that it "strongly supported" efforts to accelerate the collection of funds, and that it would order such accelerated funding if necessary or desirable for safety. As a general matter, however, the

Commission did not expect premature shutdown to be a frequent occurrence.

> [I]n most situations the majority of decommissioning funds will have been collected during the operating life of the shut down reactor. . . . Whatever funding shortfall remains can be collected or guaranteed in a time frame and through funding mechanisms commensurate with a licensee's financial situation. As that financial situation changes, the licensee, under NRC monitoring, would alter funding methods accordingly.

Staff Exhibit 57-M, 57 Fed. Reg. at 30385. It must be conceded that the experience with financial assurance for reactors is not perfectly applicable to other types of nuclear facilities. Very large publicly-regulated reactor owners have a protected market position and relatively assured solvency. Most materials licensees, in contrast, usually are business ventures whose financial strength, market position, and solvency are less certain. Most materials licensees therefore may require the development of detailed decommissioning plans and financial assurance mechanisms that guarantee in advance the full amount needed to implement those plans.

The situation of the facility proposed by LES, is, however, somewhat different from that of a typical NMSS-regulated facility. It falls, in fact, somewhere between the two types, for the following reasons:

- LES will provide full up-front funding in the form of a surety bond for decommissioning the enrichment facility, as required for a typical NMSS-regulated facility.
- The size of the financial commitment necessary to build the enrichment facility and the likelihood that it will have a substantial base of firm contracts for its services may mean that its solvency and continued operation are somewhat more assured than an ordinary commercial venture. That is, investors could perceive that the value of the enrichment facility, taking into consideration all of its risks, obligations, and decommissioning requirements (including disposition of

accumulated tails), but also including its license, physical plant, and potential for future business, could make it worthwhile to acquire its productive assets if its original owner decides to exit.

- A regulatory change in the requirements for disposition of depleted uranium, if such a change were to occur, that increased the costs for such disposition would be likely to happen early in the life of the facility, allowing substantial time for the buildup of the necessary funds. Such a change, furthermore, would affect all domestic producers of enriched uranium, and therefore would not place the LES facility in a situation of competitive disadvantage vis a vis other domestic producers.
- The size of the decommissioning obligation for disposition (deconversion, transportation, and disposal) of the tails from the enrichment plant, however, means that, like a nuclear power plant, immediate full up-front funding of all decommissioning costs is not economically feasible, but must be built up over time, just as the tails accumulate over time.
- The applicant has committed to annual forward-looking revisions to its decommissioning cost estimate for tails disposition, and commensurate changes to its financial assurance instrument covering tails disposition. Therefore, the NRC will be able to track closely on an ongoing basis how accurately funding accruals are satisfying funding needs.
- The financial assurance to be provided by the applicant will supply sufficient funds for tails dispositioning at the DOE deconversion facility currently under construction at the price estimated by the DOE at any point in the life of the proposed LES enrichment facility.
- The financial assurance to be provided by the applicant includes a substantial

(25 percent) contingency, which would be available in the event of premature closure to fill a part of any gap between the funds accumulated to complete disposition of the accumulated tails and the funds needed.

In the unlikely event that there are unusually large changes in decommissioning costs and the licensee is unable to meet its financial assurance obligations, the NRC has broad powers to enforce the decommissioning funding requirements. These powers include negotiating accelerated payments to decommissioning funds, and, if necessary, suspending licensee operations. In the unlikely event that these actions are unsuccessful in bringing the licensee into compliance. As a last resort, the NRC can request appropriations for the U.S. Department of Energy to perform the decommissioning by deconverting and dispositioning of any remaining tails at the DOE deconversion facility.

Q.5. Does this conclude your testimony?

A.5. Yes.

TIMOTHY C. JOHNSON

Professional Qualifications

I am currently the Licensing Project Manager of the Louisiana Energy Services (LES) uranium enrichment plant project in the Gas Centrifuge Facility Licensing Section, Special Projects Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission.

I received a Bachelor of Science degree in Mechanical Engineering from Worcester Polytechnic Institute in Worcester, Massachusetts, in 1971 and a Master of Science degree in Nuclear Engineering from Ohio State University, in Columbus, Ohio, in 1973.

Courses I have taken that are pertinent to my present discipline are in the areas of advanced mathematics, engineering design, mass and heat transport, thermodynamics, reactor theory, nuclear physics, nuclear power plant engineering, and health physics. I was elected to membership in Pi Mu Epsilon, the mathematics honorary society.

From January 1973 to August 1977, I was employed by Stone & Webster Engineering Corporation in Boston, Massachusetts. As the offgas and ventilation filter system specialist, I was responsible for the technical adequacy of offgas and ventilation filter systems for pressurized water reactor, boiling water reactor, high temperature gas cooled reactor, and liquid metal fast breeder reactor projects. My responsibilities included ensuring that equipment met both applicable regulatory and equipment code requirements. I prepared master specifications for offgas and ventilation filter systems for use by project staff. I reviewed project specifications and performed technical reviews of vendor proposals. I also reviewed vendor procedures for qualification and testing of offgas and ventilation system components.

Since September 1977, I have been employed by the U.S. Nuclear Regulatory Commission in the areas of radioactive waste management, decommissioning, and fuel cycle facility licensing.

From September 1977 to April 1984, I had lead responsibility for the waste form performance aspects of low-level radioactive wastes to include radwaste processing, solidification, high integrity containers, and volume reduction systems. In this capacity, I developed programs for analyzing, evaluating, coordinating, and recommending licensing actions related to the waste form and waste classification areas of 10 CFR Part 61. These responsibilities have specifically included coordinating the development of the waste form and waste classification requirements and preparing the appropriate sections for: (1) the low-level waste management regulation, 10 CFR Part 61; (2) the draft and final environmental impact statements that support 10 CFR Part 61; and (3) the technical positions on waste form and waste classification that provide guidance to waste generators for complying with the 10 CFR Part 61 requirements. I also acted as lead for an intra-agency task group for implementation for the 10 CFR Part 61 requirements at nuclear power plants.

During this time, I also participated on a Task Force responsible for Three Mile Island Unit 2 (TMI-2) waste disposal issue resolution to include the evaluation of EPICOR-II, Submerged Demineralizer System, and decontamination solution wastes. I also prepared and coordinated waste disposal section for the TMI-2 Programmatic Environmental Impact Statement. For other nuclear power facilities, I prepared and coordinated waste disposal sections for the Dresden Unit 1 Decontamination and the Turkey Point Steam Generator Replacement Environmental Impact Statements.

As Project Officer, I coordinated with contractors and managed the following technical assistance studies:

1. Alternative Methods for the Disposal of Low-Level Waste;
2. Chemical Toxicity of Low-Level Waste;
3. Volume Reduction Techniques for Low-Level Wastes;
4. TMI Resin Solidification Test Program; and
5. Assay of Long-Lived Radionuclides in Low-Level Waste from Power Reactors.

From April 1984 to April 1987, I was Section Leader of the Materials Engineering Section in the Division of Waste Management. In this capacity, I supervised a section that performed technical and engineering evaluations of low-level and high-level radioactive waste packages. This included planning and executing section programs, providing technical direction and integration of materials concerns into NRC low-level and high-level waste licensing activities, and supervising the management of technical assistance programs.

In the low-level waste area, my responsibilities included planning and supervising: (1) the reviews of topical reports on solidification agents, high integrity containers, and waste classification computer codes; and (2) the reviews of licensee specific requests for packaging unique waste materials.

In the high-level waste area, my responsibilities included planning and supervising: (1) the reviews of DOE waste package programs; (2) the reviews of draft and final Repository Site Environmental Assessments in the materials and waste package areas; (3) the direct interactions with DOE in formal waste package and waste glass program meetings; (4) the development of five-year plans for waste package activities; (5) the development of a capability to review the DOE Site Characterization Plans; and (6) the development of technical positions in the areas of waste package reliability and extrapolation of test data to long time frames.

From April 1987 to May 1992, I was Section Leader of the Special Projects Section in the Division of Waste Management. In this capacity, I supervised a section responsible for mixed wastes, decommissioning of materials licensee facilities and power reactors, financial assurance for decommissioning materials licensees and low-level waste disposal facilities, greater than Class C wastes, low-level waste disposal site quality assurance, and the low-level waste data base.

In these areas, the Special Projects Section issued three joint NRC/U.S. Environmental Protection Agency guidance documents on mixed wastes, a Standard Review Plan and a Standard Format and Content Guide on financial assurance mechanisms for materials licensee decommissioning , and a guidance document on quality assurance for low-level waste disposal facilities. The section was also responsible for coordinating the storage and disposal of greater than Class C wastes with DOE, reviewing decommissioning plans for the Pathfinder, Shoreham, Rancho Seco, and Fort St. Vrain nuclear power facilities, and developing a financial assurance program for materials licensees.

From May 1992 to November 1999, I was Section Chief of decommissioning sections in the Division of Waste Management responsible for developing and executing the Site Decommissioning Management Plan (SDMP), an agency effort to ensure that 17 decommissioning policy issues were resolved and over 40 non-routine decommissioning sites would be properly decommissioned. During this time, I acted as Project Manager for the decommissioning of the Chemetron site in Cleveland, Ohio, a controversial contaminated site located in a residential neighborhood. The site was remediated and the license terminated in 1998.

From November 1999 to the present, I was a Senior Mechanical Systems Engineer in the Division of Fuel Cycle Safety and Safeguards. In this position, I acted as deputy project manager for the Mixed Oxide Fuel Fabrication Facility licensing and project manager for the licensing of gas centrifuge uranium enrichment facilities. I am currently Project Manager for the Louisiana Energy Services gas centrifuge enrichment plant.

At the NRC, I have participated as the NRC and Division of Waste Management representative on the following industry, government, and international committees:

1. American Nuclear Society Subcommittee 16.1, Leach Testing Standard;
2. American Nuclear Society Subcommittee 40.35, Volume Reduction Systems Standard;
3. American National Standards Institute Subcommittee N14.9.2, Packaging for Transportation Standard;
4. American Society of Mechanical Engineers Radwaste Committee;
5. American Society for Testing and Materials Subcommittee C26.07, Waste Management Committee;
6. International Atomic Energy Agency Committee to prepare a Code of Practice for Low-Level Waste Management at Nuclear Power Plants;
7. International Atomic Energy Agency Committee to prepare a document “National Policies and Regulations for Decommissioning Nuclear Facilities;”
8. Interagency Review Board for the Chemical Waste Incinerator Ship Program;
9. Interagency Review Group for Disposal of Low-Level Wastes at Sea;
10. American Society of Mechanical Engineers Mixed Waste Committee.

I also served as a member of the Nuclear Engineering Program Advisory Board at Worcester Polytechnic Institute.

I am a member of the following professional societies:

American Nuclear Society
American Society of Mechanical Engineers
American Society for Testing and Materials

Publications and Presentations

T.C. Johnson, M.J. Bell, “Volume Reduction of Low-Level Wastes,” Ninth Biennial Conference of Reactor Operating Experience, Arlington, Texas, August 1979.

T.C. Johnson, P.H. Lohaus, R.D. Smith, “10 CFR 61 Waste Form Requirements,” Atomic Industrial Forum Conference on NEPA and Nuclear Regulation, Washington, DC, October 1981.

T.C. Johnson, P.H. Lohaus, R.D. Smith, “10 CFR Part 61 Waste Classification Requirements,” Electric Power Research Institute Radwaste Workshop, Charlotte, NC, October 1981.

T.C. Johnson, P.H. Lohaus, R.D. Smith, “10 CFR Part 61 Requirements,” American Society of Mechanical Engineers/Electric Power Research Institute Radwaste Workshop, Augusta, GA, February 1982.

T.C. Johnson, H. Lowenberg, “Classification of TMI Wastes,” Waste Management ‘82, Tucson, AZ, March 1982.

T.C. Johnson, P.H. Lohaus, R.D. Smith, “10 CFR 61 Waste Form Requirements,” American Nuclear Society Topical Meeting on Radioactive Waste Management, Richland, WA, April 1982.

T.C. Johnson, P.H. Lohaus, G.W. Roles, “Implementation of 10 CFR 61 Part Waste Classification and Waste Form Requirements,” Waste Management ‘83, Tucson, AZ, March 1983.

R.E. Browning, Et al.,”Status Report on NRC Regulation for Land Disposal of Low-Level Radioactive Wastes and Geologic Disposal of High-Level Wastes,” International Atomic Energy Agency Radioactive Waste Management Conference, Seattle, WA, May 1983.

P.H. Lohaus, T.C. Johnson, “NRC Approach to Dealing with Hazardous Substances in Low-Level Radioactive Wastes,” American Nuclear Society Summer Meeting, Detroit, MI, June 1983.

T.C. Johnson, P.H. Lohaus, G.W. Roles, “Implementation of 10 CFR 61 Part Waste Classification and Waste Form Requirements,” ERM-Midwest Workshop, Columbus, OH, June 1983.

T.C. Johnson, P.H. Lohaus, G.W. Roles, “Implementation of 10 CFR 61 Part Waste Classification and Waste Form Requirements,” Electric Power Research Institute Radwaste Workshop, Washington, DC, July 1983.

T.C. Johnson, P.H. Lohaus, G.W. Roles, “Implementation of 10 CFR 61 Part Waste Classification and Waste Form Requirements,” Test, Research, and Training Reactor Conference, Boston, MA, October 1983.

T.C. Johnson, P.H. Lohaus, G.W. Roles, “Implementation of 10 CFR 61 Part Waste Classification and Waste Form Requirements,” Pennsylvania Low-Level Radioactive Waste Symposium, Harrisburg, PA, October 1983.

T.C. Johnson, et al., “Economics of 10 CFR Part 61,” Waste Management ‘84, Tucson, AZ, March 1984.

M. Tokar, et al., “NRC Licensing Requirements for High-Level Radioactive Waste Packages,” Waste Management ‘85, Tucson, AZ, March 1985.

T.C. Johnson, et al., “Current Regulatory Issues,” American Society of Mechanical Engineers/Electric Power Research Institute Radwaste Workshop, Savannah, GA, February 1986.

T.C. Johnson, et al., “High-Level Waste Package Licensing Considerations for Extrapolating Test Data,” Materials Research Society Symposium, Boston, MA, December 1986.

T.C. Johnson, et al., “Update on LLW Regulatory Guides and Topical Reports,” Waste Management ‘87, Tucson, AZ, March 1987.

E.A. Wick, et al., “NRC Staff Perspective on Performance of Vitrified HLW and How It Relates to Other Components,” Waste Management ‘87, Tucson, AZ, March 1987.

T.C. Johnson, G.W. Roles, “Data Requirements for Waste Classification and Manifesting,” Department of Energy Low-Level Waste Management Conference, Denver, CO, August 1988.

T.C. Johnson, D.E. Martin, “Decommissioning Rule Overview,” NRC Region III State Liaison Meeting, Glen Ellyn, IL, September, 1988.

T.C. Johnson, D.E. Martin, “Decommissioning Rule Overview,” NRC All Agreement States Meeting, Potomac, MD, October 1988.

T.C. Johnson, D.E, Martin, “NRC Perspective on Mixed Wastes,” California Mixed Waste Workshop, Davis, CA, October 1988.

T.C. Johnson, “NRC Regulatory Initiatives,” DOE Low-Level Waste Management Conference, Pittsburgh, PA, August 1989.

T.C. Johnson, “NRC Residual Contamination Criteria,” Environmental Protection Agency/Japanese Atomic Energy Research Institute Residual Contamination Workshop, St. Michaels, MD, September 1989.

T.C. Johnson, G.W. Roles, “Decommissioning Waste Characteristics,” Environmental Protection

Agency/Japanese Atomic Energy Research Institute Residual Contamination Workshop, St. Michaels, MD, September 1989.

T.C. Johnson, “Air Treatment Issues Associated with a Mixed Oxide Fuel Fabrication Facility,” 27th Nuclear Air Cleaning and Treatment Conference, Nashville, TN, September 2002.

Instructor: American Society of Mechanical Engineers Radwaste Course, 1982, 1984-1989;
NRC Transportation and Low-Level Waste Course, NRC Technical Training Center, Chattanooga, TN, 1988, 1989.
Harvard School of Public Health Waste Disposal Course, Boston, MA, 1990.

CRAIG M. DEAN

EDUCATION

1984-85	Graduate Study, Economics and Statistics, American University
1976-1979	J.D., Georgetown University Law Center
1964-1969	M.A., (Ph.D. less dissertation), Russian Studies, Columbia University
1960-1964	B.A., cum laude, History, Carleton College

EXPERIENCE

Mr. Dean joined ICF in January 1984, and is a Project Manager. He is an attorney and regulatory analyst, with an extensive background in financial assurance. His experience includes development and implementation of financial assurance requirements for the Environmental Protection Agency, the Nuclear Regulatory Commission, and several states. Since 1986, Mr. Dean has provided support to the NRC for the development of financial assurance regulations, program implementation, case work, training, and special projects involving financial assurance.

Financial Assurance Regulations of 10 CFR Parts 30, 40, 50, 70, and 72

Since 1986, Mr. Dean has been providing support to the NRC in analysis of financial assurance submissions, evaluation of financial assurance issues, development of guidance documents and delivery of training on financial assurance, licensing reviews, and enforcement. Projects have included the following:

- Review of Financial Assurance Submissions from NMSS Licensees.
  Since promulgation of the NRC regulations on financial assurance for decommissioning of materials licensees in 1988, Mr. Dean has provided support to NRC in the review and evaluation of non-standard financial assurance submissions from licensees for costs of decommissioning licensed nuclear materials facilities. The submissions have included both decommissioning cost estimates and financial instruments. Mr. Dean has participated directly in the reviews, and has also supervised other ICF staff performing reviews and provided quality assurance.

- Financial Assurance Program Assessment.
  Mr. Dean managed major components of a multi-year analysis in 1986-1987 of financial assurance requirements of the NRC for low-level radioactive waste, mixed low-level and RCRA waste, uranium mill tailings, and source, special nuclear, and byproduct licensees, including financial mechanisms, decommissioning cost estimates, reporting and recordkeeping requirements, bankruptcy problems, financial test issues, overall regulatory structure, and guidance. The assessment compared the NRC regulatory framework with financial assurance requirements of other federal agencies, particularly the EPA. Mr. Dean is currently managing a two-year contract to provide technical assistance to NMSS related to financial assurance for decommissioning and subsurface soil and groundwater monitoring of materials and non-power reactor facilities.

- Analysis of the Implications of Electric Utility Deregulation on Nuclear Reactor Decommissioning Financial Assurance.

  Mr. Dean prepared a detailed study of the development of NRC policy on decommissioning financial assurance for nuclear power reactors to assess the implications of utility deregulation. He prepared a detailed chronological analysis of the development of NRC's policy concerning whether financial assurance should be required, the level of assurance (e.g., "reasonable assurance") required, the amounts of such assurance, the types of financial instruments to be allowed to provide assurance, the respective responsibilities of the NRC and other regulatory bodies, such as state PUCs and FERC, with respect to financial assurance, and related topics.

- Financial Assurance Training for NRC Regional and Headquarters Staff, and Agreement State Staff.

  Mr. Dean prepared and presented training in July-August 1989 to four NRC Regions on financial assurance for decommissioning, including overview of financial mechanisms, review of cost estimates, implementation procedures, and data sources. He also presented training to NRC Headquarters staff from Office of Research, Office of Nuclear Materials Safety and Safeguards, Office of General Counsel, and Commission staff. The training was repeated in September 1992 to five NRC Regions and Headquarters staff, in August 1995 to three Regions and Headquarters staff, and in 1998 to three Regions (one by teleconference), Headquarters staff, and staff from three Agreement States.

- Financial Assurance Workshops for NRC Agreement States Staff.

  Mr. Dean developed and presented a workshop on design and implementation of financial assurance for decommissioning to representatives of 28 States at the NRC annual meeting of Agreement States in October 1991. He also developed and presented a two-day training program in July 1993 sponsored by NRC's Agreement States Office for staff from 14 Agreement States. Training consisted of overview of financial assurance concepts and procedures for technical review of financial assurance submissions, including cost estimates and financial mechanisms, from nuclear materials licensees.

- Review of Decommissioning Cost Estimates and Financial Assurance Mechanisms for Proposed Fuel Enrichment Facilities.

  Mr Dean is currently managing reviews of cost estimates and financial mechanisms submitted by Louisiana Energy Services (LES) and U.S. Enrichment Company (USEC) in support of their license applications.

- Financial Assurance Compliance Support to NMSS.

  Mr. Dean has managed or participated in support to NMSS and to NRC's Office of General Counsel in special enforcement situations involving the financial ability of materials licensees to carry out necessary decommissioning activities. Topics evaluated have included corporate ownership and piercing the corporate veil of a holding company involved in bankruptcy to determine if associated companies could be sources of financial assurance for decommissioning, evaluation of the financial condition of several firms in bankruptcy or reporting financial distress and assessments of their ability to pay financial assurance if needed, review of financial mechanisms either proposed or in use by licensees, and other topics.

- Financial Assurance Compliance Support to NRR.
  Mr. Dean has provided support to NRR for the review of the terms and conditions of trust funds submitted by reactors, including a review in 2005 of proposed amendments to non-qualified decommissioning trust agreements for Turkey Point and St. Lucie nuclear plants. He has also reviewed tax issues pertaining to decommissioning trust funds established for nuclear power reactors, including evaluation of a private letter ruling addressing the tax liability of a licensee for reactor decommissioning financial assurance.

Analysis of Bankruptcy Issues Affecting Financial Assurance

- Evaluation of Vulnerability of Financial Assurance Mechanisms in Bankruptcy.
  In support of the Environmental Protection Agency's evaluation of various financial mechanisms for use to provide financial assurance for closure and post-closure care of hazardous waste management facilities, Mr. Dean prepared a comprehensive analysis of the vulnerability of financial tests, letters of credit, trust funds, and surety bonds in reorganization and liquidation. In particular, he evaluated the effects of the automatic stay provision, legal decisions allowing environmental claims and/or administrative cost claims to avoid the automatic stay; the likelihood of government claims that are subject to the automatic stay to later be given preference over other claims; and the effects of the cram down provision on the likelihood of recovery if government claims are not given priority. He also evaluated the law pertaining to the bankruptcy or reorganization of parent and subsidiary corporations and the law of parent to subsidiary ("downstream"), subsidiary to parent ("upstream") and subsidiary to subsidiary ("cross-stream") corporate guarantees.

- Bankruptcy Analysis Support to NRC.
  Mr. Dean has provided support to both NRR and NMSS staff for the analysis of bankruptcy issues. For NRR, he prepared an evaluation of nuclear power reactor ownership structures and their effects on NRC's reactor decommissioning financial assurance requirements that included an examination of the bankruptcy vulnerabilities of different forms of business organization, including corporations and partnerships as well as new forms of organization such as limited partnerships, limited liability partnerships (LLPs), limited liability limited partherships (LLLPs), and limited liability companies (LLCs). For NMSS, he supervised the preparation of a summary of bankruptcy law as it was likely to affect NMSS financial assurance; identified sources of information on the likelihood that a firm that emerges from reorganization will reenter bankruptcy and the time periods in which their reentry is most likely to occur; and evaluated financial assurance submissions by the Fansteel corporation that involved bankruptcy issues.

Analysis of Business Organization Issues Affecting Financial Assurance

- Corporate Guarantees.

  For the EPA, Mr. Dean researched the law on corporate guarantees and developed the terms and conditions of the corporate guarantee used in 40 CFR Parts 264 and 265 for financial assurance for closure and post-closure care of hazardous waste facilities. These corporate guarantee terms and conditions were subsequently adopted for financial assurance for underground storage tanks, and, by the NRC, for decommissioning financial assurance of facilities licensed by NMSS. For the EPA, Mr. Dean also reviewed the impacts of state insurance law on corporate guarantees for liability coverage.

- Evaluation of Power Reactor Ownership Structures.

  For NRC/NRR, in response to a critical study released by the STAR Foundation of the increasing use of limited liability companies and multi-tiered holding companies to own nuclear power plants, Mr. Dean prepared a comprehensive working paper describing the basic attributes of corporations, partnerships (including limited liability partnerships and limited liability limited partnerships), and limited liability companies in terms of their organic statutes (Uniform Partnership Act, Uniform Limited Partnership Act, Uniform Limited Liability Company Act, etc.) as well as other governing law. The paper compared their key organizational attributes in terms of characteristics or actions most likely to affect financial assurance (e.g., limited liability, property ownership and distribution, and dissolution of the entity). The paper evaluated whether complex holding companies or other forms of organization that include limited liability subsidiaries pose a risk to the NRC of failing to provide reasonable financial assurance for decommissioning. The paper also reviewed the use of organizational terms in 10 CFR Part 50 and recommended changes to reflect the increased variety of business organizational structures in current use by reactor owners.

- Evaluation of Licensee's Use of Limited Liability Companies.

  Mr. Dean prepared a detailed set of draft Requests for Additional Information submitted by the Office of Nuclear Reactor Regulation to Exelon Energy Corporation dealing with Exelon's use of numerous limited liability companies (LLCs) to hold trust funds for nuclear reactor decommissioning. Mr. Dean also participated in numerous teleconferences with Exelon staff, accountants, and attorneys, and NRC staff to receive Exelon's verbal explanations and determine if additional information was required. Mr. Dean then prepared a written analysis that formed the basis for a part of the Safety Evaluation Report on the licensee's proposed transactions, which involved license transfers and changes in control of the decommissioning trust funds.

Decommissioning Technology

- Evaluation of Institutional Controls for Decommissioning Facilities.
  Mr. Dean has provided support to several federal agencies, including EPA and the Department of Energy, for the evaluation of potential institutional controls for decommissioning facilities. For the DOE, he managed a study of potential long-term controls for weapons-program sites contaminated with high-level radioactive materials and evaluated studies of institutional controls at particular DOE sites prepared by the Environmental Defense Fund. For EPA, he prepared analyses of such institutional controls as deed notices, covenants, easements, and similar restrictions for use at hazardous waste management facilities and brownfields sites.

- Review of Restricted Release Decommissioning Scenarios at Selected NRC Sites.
  Mr. Dean prepared a comparison of restricted release scenarios, including site setting, constituents of concern, release criteria (DCGLs), sludges, structures, soils, groundwater, drummed wastes and solid wastes on site, disposal cell design, institutional controls and land use restrictions, offsite disposal alternatives, estimated costs, and expected duration of restrictions, for several sites, including Sequoyah Fuels, Shieldalloy Metallurgical Corporation, Molycorp, Inc., and Fansteel, Inc., as input to the remedial design for the SafetyLight site.

- Development of Independent Decommissioning Cost Estimate for NMSS Licensee Site.
  Mr. Dean participated in the evaluation of decommissioning alternatives for the SafetyLight (SLC) site located in Bloomsburg, PA. In particular, he prepared the component of the revised cost estimate developed by ICF for the site that addressed institutional controls for the site, he participated in the review and evaluation of alternative scenarios for restricted and unrestricted release, and he reviewed the final report prepared by ICF.

Preparation of Draft NRC Rulemaking and Guidance Documents on Financial Assurance

- Rulemaking Support for Financial Assurance Requirements for NMSS Licensee Decommissioning.
  Mr. Dean managed support to NMSS for the review of a petition for rulemaking by Westinghouse and General Electric requesting revised financial assurance requirements for large firms. The project involved quantification of the degree of assurance provided by all financial assurance mechanisms currently authorized by NRC and comparison to the degree of assurance provided by proposed financial test mechanism. (Cited as an example in NUREG/BR-0184, “Regulatory Analysis Technical Evaluation Handbook.”) The project culminated in development of the financial test for financial assurance currently used by the NRC. Support for the rulemaking included development of draft text for the Federal Register notice, preparation of a Regulatory Analysis, OMB clearance document, and comment summary and analysis. Mr. Dean also managed a related project to address decommissioning by licensees that are not-for-profit entities, such as hospitals and universities, or that cannot qualify for the bond component of the financial test because they do not issue bonds. The report was published as NUREG/CR-6514, *Analysis of Potential Self-Guarantee Tests for Demonstrating Financial Assurance by Non-Profit Colleges, Universities, and Hospitals, and by Business Firms That Do Not Issue Bonds,* June 1997, and formed the basis for

rulemaking action by NMSS. Support for that rulemaking also included development of draft text for the Federal Register notice, preparation of a Regulatory Analysis, OMB clearance document, and comment summary and analysis.

- Rulemaking Support for Financial Assurance Requirements for Power Reactor Decommissioning.

  Mr. Dean participated in a review of public comments on an NRC proposal to revise the financial assurance requirements for power reactors, proposed revisions to the trust fund requirements in 10 CFR Part 50, provided support for the preparation of a rule amending the requirements for nuclear power reactor decommissioning trust funds, and assisted NRC in a review of existing guidance.

- Financial Assurance Guidance.

  Mr. Dean provided support for the development of guidance materials implementing NRC requirements for financial assurance for decommissioning of licensed facilities, including NUREG-1336, Rev. 1, *Standard Format and Content Guide for Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72*, July 1989 and NUREG-1337, Rev. 1, *Standard Review Plan for the Review of Financial Assurance Mechanisms for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72*, August 1989, Regulatory Guide 3.66, *Standard Format and Content Guide for Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72*, September 1998, and NUREG-1727, NMSS Decommissioning Standard Review Plan, September 2000.

Support for Financial Assurance Requirements of the Environmental Protection Agency

- Financial Assurance for Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDFs).

  Between 1980 and 1983, while employed by the Government Research Corporation, Mr. Dean supported the development of financial assurance requirements by the Environmental Protection Agency under the Resource Conservation and Recovery Act (RCRA) for hazardous waste TSDFs. He participated in meetings with private attorneys and experts from the American Bankers Association and other trade organizations on trust funds, surety bonds, letters of credit and other financial instruments. He also participated in the development of a financial test for financial assurance. Mr. Dean also participated in the development of guidance on the preparation of decommissioning cost estimates for TSDFs.

- Financial Assurance for Underground Storage Tanks and Municipal Waste Disposal Facilities.

  Beginning in 1984, at ICF, Mr. Dean provided support to the EPA for the development of financial assurance requriements for leaking underground storage tanks containing petroleum and for municipal landfills. He also worked on the development of standards for limiting lender liability for environmental cleanup costs at facilities containing underground storage tanks.

PROFESSIONAL AFFILIATIONS

Member of the Bar of the District of Columbia (Admitted to Practice, 1979)

SELECTED PUBLICATIONS/PRESENTATIONS

NUREG/CR-6514, *Analysis of Potential Self-Guarantee Tests for Demonstrating Financial Assurance by Non-Profit Colleges, Universities, and Hospitals, and by Business Firms That Do Not Issue Bonds* June 1997.

"Financial Assurance for Low-Level Radioactive Waste Disposal Facilities: Factors Affecting the Type, Levels, and Duration of Requirements," presented at WASTE MANAGEMENT '89, Tucson, Arizona March 1, 1989.

"EPA Regulations: Mixed Waste, RCRA and Low-Level Waste," presented at the seminar on Liability Coverage for Low-Level Radioactive Waste Disposal Facilities at the quarterly meeting of the Low-Level Radioactive Waste Forum, April 27-29, 1987.

"RCRA Reauthorization: What It Means For Your Company," speech presented at Hazardous Materials Expo '85, Chicago, Illinois, August 1985.

"Review of Financial Responsibility Regulations," paper presented at RCRA Financial Responsibility and Closure/Post-Closure Plans Seminar, sponsored by Government Institutes, Inc., Washington, D.C., June 1981.

"The Design of Hazardous Waste Management Financial Responsibility Programs," paper presented at Third National Conference on Hazardous Materials Management, Anaheim, California, March 1981.

Student Topics Editor, "The Tax Lawyer," Journal of the American Bar Association, Tax Section (published jointly with Georgetown University Law Center), 1978-1979.

Louisiana Energy Services, L.P., Docket No. 70-3103-ML
March 2006 Mandatory Hearing on Uncontested Issues
Prefiled Hearing Exhibits

Party Exh. #	Witness/ Panel	Description
Staff 49-M	Safety Evaluation Report	NUREG-1827, "Safety Evaluation Report for the Proposed National Enrichment Facility in Lea County, New Mexico," (2005)
Staff 50-M	Standard Review Plan	"Louisiana Energy Services National Enrichment Facility Safety Evaluation Report Executive Summary," (Sept. 16, 2005).
Staff 51-M	Standard Review Plan	NUREG-1520, "Standard Review Plan for Review of License Applications for Fuel Cycle Facilities," (2002).
Staff 52-M	Decommissioning Funding	SECY-03-0161, "2003 Annual Update - Status of Decommissioning Program," (Sept. 15, 2003).
Staff 53-M	Decommissioning Funding	NUREG-0586, "Draft Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (1981).
Staff 54-M	Decommissioning Funding	NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (1988).
Staff 55-M	Decommissioning Funding	NUREG-0584, "Assuring the Availability of Funds for Decommissioning Nuclear Facilities," (1982).
Staff 56-M	Decommissioning Funding	NUREG-CR-1481, "Financing Strategies for Nuclear Power Plant Decommissioning," (1980).
Staff 57-M	Decommissioning Funding	57 Fed. Reg. 30,383-30,387 (July 9, 1992)
Staff 58-M	Criticality	"National Enrichment Facility Integrated Safety Analysis Summary," (2004).

Party Exh. #	Witness/ Panel	Description
Staff 59-M	Criticality	Interim Staff Guidance (ISG)-03, “Nuclear Criticality Safety Performance Requirements and Double Contingency Principle,” (Feb. 17, 2005).
Staff 60-M	FEIS Purpose and Need	NUREG-1790, “Final Environmental Impact Statement for the Proposed National Enrichment Facility in Lea County, New Mexico,” (2005).
Staff 61-M	FEIS Purpose and Need	Louisiana Energy Services Environmental Report, Section 1.0, “Purpose and Need for the Proposed Action,” (2004).
Staff 62-M	FEIS Purpose and Need	Council on Environmental Quality Regulations, 40 CFR 1500.1 and 1502.13.
Staff 63-M	FEIS Purpose and Need	Natural Resources Conservation Service, U.S. Dept. of Agriculture, “Writing a Purpose and Need Statement,” (2003).
Staff 64-M	FEIS Purpose and Need	Letter from J.L. Connaughton, Executive Director, Council on Environmental Quality, to N.Y. Mineta, Secretary, U.S. Dept. of Transportation (May 12, 2003).
Staff 65-M	FEIS Purpose and Need	Maeda, H. 2005. “The Global Nuclear Fuel Market – Supply and Demand 2005-2030: WNA Market Report”, World Nuclear Association Annual Symposium
Staff 66-M	FEIS Purpose and Need	Combs, J. 2004. “Fueling the Future: A New Paradigm Assuring Uranium Supplies in an Abnormal Market”, World Nuclear Association Annual Symposium
Staff 67-M	FEIS Purpose and Need	Cornell, J. 2005. Secondary Supplies: Future Friend or Foe?, World Nuclear Association Annual Symposium
Staff 68-M	FEIS Purpose and Need	Van Namen, R. (2005) “Uranium Enrichment: Contributing to the Growth of Nuclear Energy”, USEC Presentation to Platts Nuclear Fuel Strategies Conference.

Party Exh. #	Witness/ Panel	Description
Staff 69-M	FEIS Purpose and Need	Euratom (2005) "Analysis of the Nuclear Fuel Availability at EU Level from a Security of Supply Perspective", Euratom Supply Agency – Advisory Committee Task Force on Security of Supply.
Staff 70-M	FEIS Purpose and Need	International Energy Outlook (2000-2005)
Staff 71-M	FEIS Purpose and Need	EIA, "Uranium Marketing Annual Report," (2004), available at http://www.eia.doe.gov/cneaf/nuclear/page/forecast/projection.html.
Staff 72-M	FEIS Purpose and Need	Letter from W.D. Magwood, U.S. Dept. of Energy, to M. Virgilio, U.S. Nuclear Regulatory Commission, "Uranium Enrichment," (July 25, 2002).
Staff 73-M	FEIS Purpose and Need	U.S. Dept. of Energy, "The Global Nuclear Energy Partnership," (2006), available at http://www.gnep.energy.gov/default.html.
Staff 74-M	FEIS Purpose and Need	U.S. Dept. of Energy, "GNEP Element: Expand Domestic Use of Nuclear Power," (2006), available at http://www.gnep.energy.gov/pdfs/06-GA50035c_2-col.pdf.
Staff 75-M	FEIS Purpose and Need	U.S. Dept. of Energy, "GNEP Element: Establish Reliable Fuel Services," (2006), available at http://www.gnep.energy.gov/pdfs/06-GA50035g_2-col.pdf.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
LOUISIANA ENERGY SERVICES, L.P.	)	Docket No. 70-3103
	)	
(National Enrichment Facility)	)	ASLBP No. 04-826-01-ML
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF PRE-FILED MANDATORY HEARINGTESTIMONY REGARDING FINANCIAL ASSURANCE" in the above-captioned proceedings have been served on the following by deposit in the United States mail; through deposit in the Nuclear Regulatory Commission's internal system as indicated by an asterisk (*), and by electronic mail as indicated by a double asterisk (**) on this 24th day of February, 2006.

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