September 15, 2005

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 TESTIMONY REGARDING THE CONTINGENCY FACTOR USED BY LES IN THE DECOMMISSIONING COST ESTIMATE

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

A.1. (TJ) 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 hereto.

A.1. (JM) Jennifer Mayer. 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 hereto.

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

Q.2. Please describe your current job responsibilities in connection with the NRC Staff's review of the application by 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 NUREG-1827, "Safety Evaluation Report, for the National Enrichment Facility in Lea County, New Mexico", June 2005, (SER) that documents the safety review prepared by NRC Staff including the portion relevant to this proceeding, Chapter 10 ("Decommissioning"), attached as Staff Exhibit 37. In the review of the application, I focused particularly on the decommissioning funding and waste management aspects of the proposed facility.

A.2. (JM) I have assisted the NRC Staff in evaluating the proposed decommissioning funding plan for the NEF and was the principal author of the decommissioning cost sections of Chapter 10 of the SER.

A.2. (CD) I am the manager responsible for the technical support provided by ICF Consulting to NRC in evaluating the financial assurance provisions in LES's decommissioning funding plan. In that capacity, I was the principal evaluator of the financial assurance instruments and the assessment of the adequacy of the contingency factor.

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

A.3. (TJ, JM, CD) The purpose of our joint testimony is to provide the NRC Staff's views concerning the admitted contentions regarding the contingency factor used by LES in estimating the cost of decommissioning. The specific Contention we address here is EC-5/TC-2.

Q.4. Are you familiar with Contention EC-5/TC-2?

A.4. (TJ, JM, CD) Yes. Contention EC-5/TC-2, as relevant, states:

Louisiana Energy Services, L.P., (LES) has presented estimates of the

> costs of decommissioning and funding plan as required by 42 U.S.C. 2243 and 10 C.F.R. 30.35, 40.36, and 70.25 to be included in a license application. See Safety Analysis Report 10.0 through 10.3; ER 4.13.1. Petitioners specifically contest the sufficiency of such presentations as based on (1) a contingency factor that is too low . . .

Q.5. Please explain what is meant by a "contingency factor."

A.5. (TJ, JM, CD) A contingency factor is a specified percentage which is added to the sum of decommissioning costs.

Q.6. Has LES included a contingency factor in its decommissioning cost estimate?

A.6. (TJ, JM, CD) Yes. LES has added an additional 25% as a contingency factor to the overall cost of decommissioning, in the amount of $188,318,000.

Q.7. What is the purpose of using a contingency factor?

A.7. (TJ, JM, CD) The purpose of the contingency factor is to ensure that the cost estimate is large enough to provide reasonable assurance that funds will be available to pay for any unforeseen circumstances that could increase the decommissioning costs.

Q.8. What about costs that can be foreseen but are not known for certain?

A.8. (TJ, JM, CD) Those costs are expected to be included and accounted for in the decommissioning cost estimate. The Staff recognizes that some costs cannot be predicted with certainty but nevertheless can be expected. In these cases, applicants such as LES must account for them in their cost estimate, using the best available documentation.

Q.9. What if those costs change over time?

A.9. (TJ, JM, CD) As circumstances change and developments occur licensees must account for those changes in the periodic updates to their decommissioning funding plan. If these changes cause the funding estimate to increase, licensees must adjust the funding put aside for decommissioning to account for the increase. In this way, licensees must account for changes that impact the cost of decommissioning over

the life of the facility. In the case of LES, these updates will be made on a yearly basis for tails disposition costs and at least every three years for facility decommissioning.

Q.10. Assuming that LES becomes a licensee and some circumstance occurs which will increase the cost decommissioning, can LES choose to keep its funding level the same on the premise that the increase is accounted for by the contingency factor?

A.10. (TJ, JM, CD) No. LES would be required by 10 C.F.R. 10 C.F.R. §§ 70.25(e), 30.35(e) and 40.36(d) and license condition to revise its decommissioning cost estimate and to increase the amount of the decommissioning fund to cover the increased cost. Once a cost or increase in cost is foreseeable, LES must account for the cost and fund it.

Q.11. Is there any NRC guidance on the appropriate value of the contingency factor to be used for this purpose?

A.11. (TJ, JM, CD) Yes, NUREG-1757, NMSS Decommissioning Standard Review Plan, Appendix A, Section A.3.1.2.3, "Contingency Factor," LES Exhibit 82, states the following:

> "[T]he cost estimate should apply a contingency factor of 25 percent to the sum of all estimated decommissioning costs. The 25 percent contingency factor provides reasonable assurance for *unforeseen* circumstances that could increase decommissioning costs, and should not be reduced or eliminated just because foreseeable costs are low." (Italics in original)

Q.12. How did you determine whether the contingency factor used by LES was appropriate?

A.12. (TJ, JM, CD) First, I determined that the contingency factor met the requirements of NRC guidance in NUREG-1757. Second, I compared the contingency factor of 25 percent to contingency factors used in NUREG/CR-6477, Revised Analyses of Decommissioning Reference Non-Fuel-Cycle Facilities (July 1998) attached as Staff

Exhibit 38. NUREG/CR-6477 uses a contingency factor of 25 percent for a variety of facilities that are similar to the proposed LES facility. Third, I concluded that the decommissioning activities to be performed were relatively simple and straightforward, and therefore extremely unlikely to result in unforeseen costs so large that a 25 percent contingency would not be sufficient.

Q.13. Does this conclude your testimony?

A.13. (TJ, JM, CD) Yes.

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 TESTIMONY REGARDING THE CONTINGENCY FACTOR USED BY LES IN THE DECOMMISSIONING COST ESTIMATE" in the above-captioned proceeding have been served by Federal Express as indicated by a pound sign (#); through deposit in the Nuclear Regulatory Commission's internal mail system as indicated by an asterisk (*), and notified of distribution by electronic mail as indicated by a double asterisk (**) on this 15th day of September, 2005.

Administrative Judge * **
G. Paul Bollwerk, III
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Mail Stop: T-3F23
Washington, D.C. 20555
E-Mail: gpb@nrc.gov

Administrative Judge * **
Charles Kelber
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Mail Stop: T-3F23
Washington, D.C. 20555
E-Mail: cnkelber@aol.com

Administrative Judge * **
Paul Abramson
Atomic Safety and Licensing Board Panel
U.S. Nuclear Regulatory Commission
Mail Stop: T-3F23
Washington, D.C. 20555
E-Mail: pba@nrc.gov

Office of Commission Appellate Adjudication*
U.S. Nuclear Regulatory Commission
Mail Stop: O-16C1
Washington, D.C. 20555

Office of the Secretary * **
ATTN: Rulemakings and Adjudication Staff
U.S. Nuclear Regulatory Commission
Mail Stop: O-16C1
Washington, D.C. 20555
E-mail: HEARINGDOCKET@nrc.gov

Mr. Rod Krich, Vice President
Licensing, Safety and Nuclear Engineering
Louisiana Energy Services
2600 Virginia Avenue NW.
Suite 610
Washington, D.C. 20037

James. R. Curtiss, Esq. ** #
Dave Repka, Esq. **
Martin O'Neill, Esq. **
Amy C. Roma, Esq.
Winston & Strawn
1700 K Street, N.W.
Washington, D.C. 20006
E-mail: jcurtiss@winston.com
drepka@winston.com
moneill@winston.com
aroma@winston.com

Lindsay A. Lovejoy, Jr. ** #
Nuclear Information and Resource Service
1424 16th Street, NW.
Suite 404
Washington, D.C. 20036
E-mail: lindsay@lindsaylovejoy.com
llovejoy@cybermesa.com

/RA/

Lisa B. Clark
Counsel for NRC Staff

Updated September 22, 2005

Louisiana Energy Services, L.P., Docket No. 70-3103-ML
October 2005 Evidentiary Hearing on Contested Issues
Hearing Exhibits

Party Exh. #	Witness/ Panel	Description
Staff 36	Deconversion; Disposal	NUREG-1790, "Final Environmental Impact Statement for the Proposed National Enrichment Facility in Lea County, New Mexico" (June 2005), Chapters 2 and 4 ("Alternatives" and "Environmental Impacts")
Staff 37	Deconversion; Transportation; Disposal; Contingency	NUREG-1827, "Safety Evaluation Report for the National Enrichment Facility in Lea County, New Mexico" (June 2005), Chapter 10 ("Decommissioning")
Staff 38	Deconversion; Contingency	NUREG/CR-6477, "Revised Analyses of Decommissioning Reference Non-Fuel-Cycle Facilities" (Jul. 1998)
Staff 39	Deconversion;	In-Office Review Summary: LES Decommissioning Fund (May 31, 2005)
Staff 40	Deconversion	Letter from Robert C. Pierson, NRC, to Robert A. Williams, Westinghouse Electric Corp., "Subject: Renewal," (Nov. 3, 1995), enclosing "Safety Evaluation Report for the Renewal of Special Nuclear Material License SNM-1107 for the Westinghouse Electric Corporation Columbia Fuel Fabrication Facility, Columbia, South Carolina" (Sept. 1995) (excerpt).
Staff 41	Deconversion	Letter from Robert C. Pierson, NRC, to L.J. Maas, Siemens Power Corporation, "Subject: Renewal," (Nov. 15, 1996), enclosing "Safety Evaluation Report for the Renewal of Special Nuclear Material License SNM-1227 for the Siemens Power Corporation Richland Engineering and Manufacturing Facility, Richland, Washington" (Nov. 1996) (excerpt).

Party Exh. #	Witness/ Panel	Description
Staff 42	Deconversion	Letter from Michael F. Weber, NRC, to Ralph Reda, "Subject: Safety Evaluation Report: Application dated September 19, 1997, Changes to Table 6.0 for the DCP HF Effluent Recovery and Storage Facility," (Sept. 26, 1997), enclosing "Safety Evaluation Report for the Renewal of Special Nuclear Material License SNM-1097 for the General Electric Company, Nuclear Energy Production, Wilmington, North Carolina" (June 1997) (excerpt).
Staff 43	Disposal	STP-04-003, "NRC Process to Identify Decommissioning Sites with Inadequate Funding for Remediation" (Jan. 2004)

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.

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.

Jennifer Mayer **ICF Consulting**
Senior Associate

EDUCATION

B.S., Chemical Engineering with Honors, Bucknell University, Lewisburg, Pennsylvania, 1992

EXPERIENCE OVERVIEW

Ms. Mayer is a chemical engineer with over thirteen years of experience in cost modeling and cost-benefit analyses. She has prepared several independent cost estimates for clean up for license termination, and reviewed a number of decommissioning funding plans. She recently prepared the cost benefit analysis for the Generic Environmental Impact Statement for NRC's clearance rule. She has also prepared cost models to evaluate the cost impacts of various proposed rulemakings including changes to EPA's LDR program, the addition of several industrial sectors to EPA's Toxic Release Inventory reporting system, and entombment of nuclear reactors as a decommissioning alternative.

PROJECT EXPERIENCE

Review of Decommissioning Cost Estimates/Decommissioning Funding Plans

Cost Estimate Review for Fuel Enrichment Facilities, U.S. NRC, 2004-Present.
Ms. Mayer has supported NRC in review of decommissioning cost estimate, decommissioning funding plan and the cost estimate in the GEIS for one or two proposed fuel enrichment facilities, and has reviewed the decommissioning cost estimate and decommissioning funding plans for a second facility. These reviews include evaluation for inclusion of required elements, determination if individual unit costs are reasonable, and appropriate adjustment to cost estimates to account for inflation and/or facility operational changes.

Decommissioning Cost Estimate/ Decommissioning Funding Plan Review,
U.S. NRC, 2000-Present.
Ms. Mayer has supported NRC in review of over a dozen decommissioning cost estimates and decommissioning funding plans under 10 CFR Parts 30, 40, 70, and 72. These reviews included ensuring all necessary required elements were included, determining of whether individual unit costs and total costs were reasonable, and determining if appropriate adjustment to cost estimates to account for inflation and/or facility operational changes were included. For each review, Ms. Mayer prepared a memorandum listing deficiencies and potential deficiencies.

Fuel Cycle Facility Licensing Procedures Deposition Support, US NRC, 2004-Present.
Ms. Mayer attended the depositions of expert witnesses on the costs of decommissioning a fuel cycle facility as a technical expert, and provided feedback to NRC's legal counsel. Ms. Mayer also attended expert witness training for depositions and may be called to act as an expert witness.

Requests for Additional Information in Fuel Cycle Facility Licensing Procedures, US NRC 2004-Present.
For the licensing procedures associated with the LES fuel cycle facility, Ms. Mayer has reviewed decommissioning cost estimates, presented potential deficiencies to NRC, and reviewed both NRC's draft Requests for Additional Information (RAIs) and the potential licensee's responses to those RAIs.

Review of PCB Commercial Storage Applications, U.S. EPA, 1998-Present.
Ms. Mayer is managing ICF Consulting's support in reviewing PCB commercial storage applications for EPA's OPPT, to ensure that closure plans meet the requirements of TSCA in order for facilities to receive operating approval from EPA. She has both conducted reviews herself and supervises a team of reviewers. Each review includes providing a summary of deficiencies and recommendations for additional information necessary for permit approval, as well as verifying the closure cost estimate to determine if the costs of carrying out all of the activities described in the closure plan are covered.

Other Cost Estimates

Independent Cost Estimate for Radioactive Contamination Cleanup, U.S. NRC, 2002.
For US NRC, Ms. Mayer reviewed existing characterization data for a contaminated site in eastern Oklahoma, and contributed to a summary characterization document. She also reviewed cost estimates provided by the facility, offered comment, and prepared an independent cost estimates for cleanup of the site under an unrestricted release scenario.

Independent Cost Estimate for Radioactive Contamination Cleanup, U.S. NRC, 2001.
For US NRC, Ms. Mayer reviewed existing characterization data and cost estimates for a contaminated site in central Pennsylvania, provided comment, and prepared an independent cost estimates for cleanup of the site under five different scenarios, including restricted release and unrestricted release. This cost estimate used comparisons of contaminant levels with derived concentration guidance levels to determine the extent of contamination that had to be removed for buildings, groundwater, soil, and vegetation. She participated in a site visit to better understand the conditions of almost 20 buildings and numerous areas of soil contamination.

Screening Level Analysis of Restricted Release Site Cleanups, U.S. NRC, 2001.
For NRC, Ms. Mayer conducted a screening level analysis to model the costs of remediating six sites to restricted release levels. She helped develop feasible release scenarios and applied generic cost assumptions to input data provided by NRC. This work was used as the basis for STP-04-003.

Support for Rulemaking Planning

Entombment, U.S. NRC, 2001-2002.
Ms. Mayer conducted a cost analysis of proposed changes to the Entombment scenario of nuclear reactor decommissioning. She calculated costs to model reactors decommissioning under decontamination, safe storage, and entombment scenarios to determine if entombment was an economically feasible alternative. For this modeling, she considered both the current regulatory requirements and the proposed regulatory requirements.

Cost Benefit Analysis for Controlling the Disposition of Solid Materials, U.S. NRC, 2003-Present.
Ms. Mayer prepared the cost-benefit analysis for the Draft Generic Impact Statement for Controlling the Disposition of Solid Materials. Focusing on solid materials from light water reactors, she is modeling the costs and benefits of allowing this material to "clear" under each of four regulatory alternatives and 5 dose option levels. She is prepared the Regulatory Analysis based on this cost-benefit analysis. She has modeled the incremental values and impacts over a 50-year timeframe relative to the no action baseline by evaluating each of the 18 attributes that must be analyzed under NUREG BR/0814.

Regulatory Analysis for Fire Protection Manual Action Rule, 2004.
Ms Mayer prepared the draft Regulatory Analysis for changes to 10 CFR Part 50 dealing with operator manual actions. In this analysis, she examined the effect of the rule with and without an interim enforcement policy. Her analysis also considered the effect of some licensees not being in full compliance with existing requlations.

Regulatory Analysis of IAEA Safety Standards, U.S. NRC, 1999-2000.
Ms. Mayer evaluated the regulatory implications of NRC adoption of the IAEA ST-1 provisions pertaining to uranium hexafluoride (UF_6) in proposed revisions to 10 CFR Part 71. Specifically, she evaluated the difference between the international standard referenced by IAEA (ISO 7195) and the national standard referenced by existing regulations (ANSI N14.1), as well as other differences in regulatory requirements. She then estimated the amount of UF_6 shipped, and the cost of necessary changes in management, and the environmental costs and benefits.

Summary of Analysis of Public Comments

NRC Clearance Rule Comment Summary, 1999.
Ms Mayer assisted in summarizing comments received on the NRC Clearance rule. In particular, she summarized comments pertaining to restricted release of materials, as an alternative to unrestricted release.

Phase IV Land Disposal Restrictions, 1997.
Ms. Mayer helped manage ICF's work in summarizing over 600 comments on EPA's Phase IV LDR rule. For this effort, she helped develop the issue outline, provided specifications for the Lotus Notes system used in the comment summary process, and responded to technical questions from staff reading comment letters to best categorize comments. She also helped summarize the major issues raised by the commenters. Ms. Mayer helped prepare several technical background documents that were used by EPA to respond to commenters concerns as well as revising another technical background document to incorporate facility specific information provided in the public comment process.

Environmental Analysis

Environmental Assessment of IAEA Safety Standards, U.S. NRC, 1999-2000.
Ms. Mayer evaluated the environmental implications of NRC adoption of the IAEA ST-1 provisions pertaining to uranium hexafluoride (UF_6) in proposed revisions to 10 CFR Part 71. Specifically, she evaluated the difference between the international standard referenced by IAEA (ISO 7195) and the national standard referenced by existing regulations (ANSI N14.1), as well as other differences in regulatory requirements. She then estimated the amount of UF_6 shipped, and the cost of necessary changes in management, and the environmental costs and benefits.

Environmental Assessment of Geological and Seismological Characteristics for and Design of Dry Cask Independent Spent Fuel Storage Installations (10 CFR Part 72).
Ms. Mayer helped evaluate the environmental implications resulting from proposed changes to 10 CFR Part 72, including changes to the design earthquake and other design requirements for ISFSIs.

Selected Company Reports

Decommissioning Cost Estimate For Safety Light Corporation Bloomsburg, PA, 2001.

Decommissioning Cost Estimate For Fansteel Inc. Muskogee, OK, 2002.

Economic Analysis for Final Rule: Revisions to the Underground Injection Control Regulations for Class V Injection Wells, 1999.

Application of Phase IV Land Disposal Restrictions to Newly Identified Mineral Processing Wastes, Regulatory Impact Analysis, April 1998.

Regulatory Analysis of IAEA Safety Standards, 2000.

Regulatory Analysis for Controlling the Disposition of Solid Materials: Draft Report, 2005

Regulatory Analysis of Post-fire Operator Manual Actions Rule - 10 CFR Part 50 - Appendix R: Draft Report, 2004

Group II Cost Estimates And Financial Capability Assessment For Staff Response To SRM-SECY-00-180 Draft Report, 2002 (Basis of STP-04-003)

-
-
- have [illegible]

Analysis [illegible] NRC a Projec

Mr. Dean managed maj[illegible] Since promulgation of the NRC regulations 1986-1987 [illegible] financial assurance for

B.A., M.A., [illegible]

by fi

Mr. Dean has

bankruptcy

Mr. Dean has provided support to both NRC and NMSS staff on bankruptcy issues

Analys[illegible]

tra[illegible]

Mr. Dean prepared a detailed set of draft Re[illegible]

-4-

- **Preparation of Draft NRC Rulemaking and Guidance Documents on Fi[illegible]**

[illegible]

Mr. Dean managed support to[illegible]

- **Support for Financial Assurance Requirements of the Environmental Protection**

Beginning in 1984, at ICF, Mr. ...

Between 1980 and 1983, while employed by ...

(pu