

April 4, 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'S REPLY FINDINGS OF FACT AND CONCLUSIONS OF LAW
CONCERNING NIRS/PC CONTENTIONS
EC-1 (IMPACTS UPON GROUND AND SURFACE WATER), EC-2 (IMPACT ON WATER
SUPPLIES), EC-4 (IMPACTS OF WASTE STORAGE), AND EC-7 (NEED FOR THE
FACILITY)

I. INTRODUCTION

In accordance with the Atomic Safety and Licensing Board's "Memorandum and Order (Post-Evidentiary Hearing Administrative Matters) dated February 14, 2005, Louisiana Energy Services, L.P. ("LES"), Nuclear Information and Resource Service and Public Citizen ("NIRS/PC") and the Nuclear Regulatory Commission Staff ("NRC" or "Staff") filed proposed findings of fact and conclusions of law concerning NIRS/PC Environmental Contentions EC-1 (Impacts Upon Ground and Surface Water), EC-2 (Impact on Water Supplies), EC-4 (Impacts of Waste Storage), and EC-7 (Need for the Facility).¹ Pursuant to the Board's Order, the Staff files its reply to the proposed findings of fact and conclusions of law that were filed by LES and NIRS/PC concerning NIRS/PC Environmental Contentions.

¹ See "Louisiana Energy Services, L.P.'s Proposed Findings of Fact and Conclusions of Law Regarding Environmental Contentions" ("LES Findings"), dated March 14, 2005; "Proposed Findings of Fact and Conclusions of Law Based Upon Evidentiary Hearing Held on February 7 Through 10, 2005 Submitted on Behalf of Petitioners Nuclear Information and Resource Service and Public Citizen" ("NIRS/PC Findings"), dated March 14, 2005; "NRC Staff's Proposed Findings of Fact and Conclusions of Law Concerning NIRS/PC Environmental Contentions EC-1 (Impacts Upon Ground and Surface Water), EC-2 (Impact on Water Supplies), EC-4 (Impacts of Waste Storage), and EC-7 (Need for the Facility)" ("Staff Findings"), dated March 14, 2005.

II. FINDINGS OF FACT

A. EC-1 (Impacts Upon Ground and Surface Water)

2.1 Mr. Toblin testified that there is no way to predict the probability, frequency or rate of leakage that will occur at basins which will be constructed at the proposed National Enrichment Facility (“NEF”) with any degree of certainty because these depend on the performance of the specific liner material used in these types of basins over time. Tr. at 661. He also indicated that the designs for the treated effluent evaporative basin (“TEEB”) and the uranium byproduct cylinder storage pad stormwater retention basin (“USPSRB”), including the specific type of liner material to be used, had not been finalized. Moreover, Mr. Toblin testified that available survey information about liner leakage is subject to a great degree of uncertainty due to the survey’s wide variety of findings. Tr. at 761. Therefore, for the reasons stated on pages 25-26 of the Staff’s *Proposed Findings of Fact and Conclusions of Law*, although NIRS/PC suggests that the probability and frequency of liner leakage could be obtained from data specifying liner type and age, we conclude that further investigation to obtain this data is unnecessary and would not yield useful results.

2.2 NIRS/PC suggests that Mr. Toblin is not familiar with the concept that uranium absorbs on clay. NIRS/PC Findings, at p. 6. We find that Mr. Toblin’s testimony regarding the phenomenon that uranium absorbs on clay is based on a well-accepted scientific principle of which an expert such as Mr. Toblin would have knowledge based on his professional and academic experience.

2.3 To support its claim of recharge based on instances of moisture found in borings at sites neighboring the proposed NEF, NIRS/PC states that “[t]he Terra Dynamics report for WCS [Waste Control Specialists] states that recharge to the upper Dockum Aquifer [Chinle Formation] is provided by vertical infiltration of precipitation from the overlying units of the Quaternary-Tertiary Aquifer and the High Plains Aquifer.” NIRS/PC Findings, at p. 15; *RCRA Permit Application for a Hazardous Waste Storage, Treatment and Disposal Facility, Andrews County, Texas, Section VI,*

Geology Report, prepared for Waste Control Specialists, Inc. by Terra Dynamics, Inc., March 1993, LES Exh. 3, Tab M, at p. VI.B.-5. However, neither of these two aquifers cited in the Terra Dynamics report exist at the proposed NEF site. Furthermore, this report states that the Chinle Formation serves as an aquitard. *Id.*, at p. VI.B.-4. We find that, because no aquifer exists at the proposed NEF which could recharge the Chinle Formation, and based on the evidence of the Chinle's very low permeability (*Draft Environmental Impact Statement for the Proposed National Enrichment Facility in Lea County, New Mexico*, NUREG-1790, September 2004, redacted non-sensitive version ("DEIS"), Staff Exh. 1b, at pp. 3-35 - 3-36), the conditions described in the Terra Dynamics report cited by NIRS/PC do not apply to the proposed NEF site.

2.4 NIRS/PC emphasizes Mr. Peery's acknowledgment that borehole logs contain notations of moisture at the alluvial-Chinle contact. NIRS/PC Findings, at p. 15. Specifically, NIRS/PC calls out 16 boreholes where moisture was found at this location. *Id.* We find it important to note that all of the borings referred to during this dialogue were taken from the WCS site, not from the proposed NEF site. It has been established that certain conditions such as fractured caliche, buffalo wallows, and depressions along Red Bed Ridge are specifically present at the WCS site and lead to areas of groundwater in the alluvium at the WCS site. Tr. at 406; 546-7. In contrast, these conditions are not present at the proposed NEF.

2.5 NIRS/PC suggests that Mr. Toblin's testimony was inconsistent in that he concluded there would not be a continuous gravel layer at the proposed site, while also stating that it is not his judgment to correlate the gravel identified in the Cook-Joyce boreholes. NIRS/PC Findings, at pp. 16-7. Mr. Toblin testified that gravel was not present in a continuous gravel layer. Tr. at 706. In his testimony, he elaborated on two reasons underlying this conclusion. First, he noted that the boring logs in the Cook-Joyce Hydrogeologic Investigation (LES Exh. 3, Tab L) listed the presence of gravel at different depths in each log. Tr. at 706. Second, he also based his conclusion on the statement in the Cook-Joyce Hydrogeologic Investigation (LES Exh. 3, Tab L, at p. 9) that "[t]here

are minimal amounts of gravel in certain zones but gravel is not consistently present throughout the site.” When NIRS/PC counsel’s asked “[s]o you’re able to decide that you cannot correlate any of these gravels in one well with another one. You can tell that?” and Mr. Toblin replied that “it’s not my judgment,” we understand that to mean that Mr. Toblin relied on the conclusions in the Cook-Joyce report (the boring logs themselves and a narrative description of the site) as the basis for his statement that there is not a continuous gravel layer. Tr. at 706-7.

2.6 NIRS/PC states that “[w]ater released from the NEF may penetrate through the alluvium and through the Chinle to the Santa Rosa Formation” and that “[s]uch prospect calls for thorough analysis of the NEF site.” NIRS/PC Findings, at p. 18. The Staff addressed this point in the DEIS and found that “[u]sing the largest measured Chinle Formation permeability, vertical ground-water velocity through the clay is conservatively estimated as 0.04 meters per year (0.13 feet per year); the resulting travel time from the surface of the clay to its base (the top of the Santa Rosa Formation) would be greater than 8,000 years.” Staff Exh. 1b, at p. 3-36. NIRS/PC presented no evidence supporting any other estimate. Based on this information, we therefore find that the Staff has adequately investigated the “prospect” of water from the proposed NEF reaching the Santa Rosa Formation, and has reasonably concluded that it would take several thousand years.

B. EC-2 (Impacts Upon Water Supplies)

2.7 NIRS/PC asserts that there is a contradiction regarding the amount of saturated thickness that will exist in the Hobbs well field in the year 2040. NIRS/PC Findings, at p. 28. NIRS/PC first quotes the testimony of Mr. Peery, who stated that the State Engineer’s modeling of the Hobbs well field indicates that there will be “saturated thickness of approximately 50 to 150 feet...particularly in the northern portion of the well field” but then cites to the testimony of its own witness, Mr. Rice, who stated that the State Engineer’s model actually predicts that there would be “38.2 feet of saturated thickness.” Tr. at 1296,1373. We find that no such contradiction

exists between the figures quoted by the witnesses. Instead, these findings reflect the fact that the amount of saturated thickness predicted by the model is not consistent among every cell throughout the Hobbs well field. Mr. Peery's testimony accurately reflects the findings of the State Engineer's simulation, which shows that most of the northern area of the Hobbs well field, which is shown over several cells in the model, will have a saturated thickness between 50 and 150 feet in 2040. *Numerical Simulation of Groundwater Flow for Water Rights Administration in the Lea County Underground Water Basin New Mexico*, Ghassan Musharrafieh & Mustafa Chudnoff, New Mexico Office of the State Engineer, Hydrology Bureau Report 99-1, January 1999, Staff Exh. 21, at Figure 24. On the other hand, Mr. Rice's testimony reflects the findings of the NRC Staff's simulation, in which the Staff re-ran the State's model by withdrawing water from only a single cell which was specifically chosen as one of minimum local saturated thickness to obtain 38.2 feet as the saturated thickness of the Hobbs well field in 2040. Tr. at 1328-9. We find that these two figures are not inconsistent because they reflect the saturated thicknesses of completely different cells in the model.

2.8 To determine the impacts of water usage by the proposed NEF on the Hobbs well field and Lea County Underground Water Basin, the NRC Staff relied on the finite-difference numerical computer model provided by the New Mexico Office of the State Engineer. Tr. at 1315. The Staff explained all assumptions and parameters of its modeling effort in the pre-filed direct testimony of Mr. Toblin. *Id.* at 1315-17. Not until after the conclusion of the hearing did NIRS/PC request that "[a]t a minimum, low, medium, and high estimates of water usage should be set forth, and the impact of the proposed NEF should be shown under each estimate." NIRS/PC Findings, at p. 30. This is the first instance that NIRS/PC has requested that such simulations be performed. The contention itself lacks such a specific request and only charges that the NRC should show how NEF pumpage would affect water levels and the long-term productivity of the Hobbs well field or the Lea County Underground Water Basin. In fact, in his pre-filed direct testimony, NIRS/PC's own

witness Mr. Rice stated only that “[t]he long-term effects of water use by the NEF could be estimated by simulating the pumpage from the Hobbs well field both with, and without, the additional pumpage required for the proposed NEF.” Tr. at 1355. During his oral rebuttal of the Staff’s testimony, Mr. Rice also made no mention that estimates of water usage by the NEF should be set forth according to low, medium and high estimates of usage. We therefore find that this request by NIRS/PC exceeds the scope of this contention, and that the Staff has satisfied the deficiency alleged in the contention by the simulations described in the testimony of Mr. Toblin. Tr. at 1311-17.

2.9 At the hearing, Mr. Toblin stated that the ratio between the projected lifetime usage of the NEF and the number of cubic meters of Ogallala reserves in the State of New Mexico was relevant to show that the LES facility would not have an impact region-wide. Tr. at 1336. Mr. Toblin, in response to a question by NIRS/PC counsel, stated that he did not expect the impact of the NEF’s usage to be reflected over this entire area, and NIRS/PC extrapolated from this line of questioning to conclude that “the calculation in the DEIS...is not a relevant measure of impact.” Tr. at 1336; NIRS/PC Findings, at p. 30. Based on the context in which Mr. Toblin made these statements, we find that this conclusion by NIRS/PC does not accurately reflect the entirety of the testimony. Mr. Toblin did not state that the ratio and calculation in the DEIS were not relevant measures of impact; rather, he stated that the ratio was relevant for the specific purpose of demonstrating the lack of regional impact by the proposed NEF’s projected water usage.

C. EC-4 (Impacts of Waste Storage)

2.10 NIRS/PC argues that the Staff has not evaluated the information contained in prior EIS’s, and that these analyses of deconversion impacts cannot be relied upon to satisfy the NEPA. NIRS/PC Proposed Finding at 33-36, 56-57. NIRS/PC’s argument is flawed in its fundamental assumption that independent verification of all prior analyses is required in order for the Staff to address deconversion impacts. It is within the NRC Staff’s discretion to consider EISs prepared

by other agencies. In this case, the Commission specifically stated that the Staff could consider the DOE EISs in preparing the Staff's EIS, relative to environmental issues associated with the treatment of DUF₆ tails. Notice of Receipt of Application for License, Notice of Availability of Applicant's Environmental Report; Notice of Consideration of Issuance of License; and Notice of Hearing and Commission Order, dated February 6, 2004.² So long as the Staff exercises independent judgment in its conclusion on environmental impacts, through expert scientific evaluation it may use scientific data and analyses contained in another agency's EIS.

2.11 NIRS/PC seemingly attempts to demonstrate that the Staff failed to exercise independent judgement, by arguing that Dr. Palmrose did not perform any calculations or check any of the calculations in DOE's EISs. NIRS/PC Proposed Findings at 34. However, this is an incorrect characterization of the work conducted by the Staff in preparing the DEIS. In response to a question of whether he had checked any of DOE's calculations, Dr. Palmrose clearly testified that he "reviewed the impacts presented to determine whether or not they were reasonable" and based on his experience and expertise "determined that they were reasonable." Tr. at 1027. Dr. Palmrose testified that he was aware of the Commission's Order notifying the Staff that it could consider the DOE EISs, and that it is common practice to rely on and make reference to previous analyses such as the DOE analyses in the FEISs for Paducah and Portsmouth. Tr. at 1056. Dr. Palmrose presented extensive testimony detailing how he conducted his review, and how the prior environmental analyses prepared by DOE were incorporated into his work on deconversion impacts and the conclusions reached by the Staff in the DEIS. 997-1007, 1018-22, 1026-56. Nothing NIRS/PC has presented calls into question the independent nature of the Staff's environmental conclusions, but rather attacks the Staff's *ability* to rely on already existing scientific data. As is discussed subsequently, the Board concludes as a matter of law that consideration of

² The Board wishes to note, that this is in no way meant to infer that a Commission Order is required for the Staff to adopt, or incorporate other agency EISs.

such material and its incorporation into the Staff's DEIS is permissible so long as the Staff maintains independent judgement in its conclusions. The Board finds that the Staff did exercise independent judgment in analyzing the existing information, its reliability, and relevance, in preparing the DEIS.

2.12 NIRS/PC also argues the Staff failed to consider the impacts of deconversion using a process that generates anhydrous HF. NIRS/PC Proposed Findings at 36-39, 57. During the proceeding, LES committed that for deconversion of DUF_6 generated by the proposed NEF, an anhydrous HF option or process would not be used. Tr. at 932-34. Furthermore, LES has committed to amending its license application to reflect that anhydrous HF will not be employed at a facility selected for deconversion of DUF_6 generated at the proposed NEF. *Id.* Mr. Krich stated under oath during the hearing, that LES was "willing to put into the license application [LES's] commitment not to use the anhydrous hydrofluoric acid option." Tr. at 933. As the Applicant has specifically committed to not use the process of upgrading to anhydrous HF in the deconversion of DUF_6 produced at the proposed NEF, it is no longer reasonably foreseeable that anhydrous HF will be produced and managed when the DUF_6 produced by the proposed NEF is converted. This information, therefore, obviates the need for the Staff to analyze the impacts of management of anhydrous HF in its DIES.

2.13 The Board believes an additional point related to testimony regarding anhydrous HF should be made to clarify a characterization made by NIRS/PC in its Proposed Findings. NIRS/PC attacks Dr. Palmrose's testimony in which he stated that the anhydrous HF process is not technically effective and has not been proven for industrial use. Tr. at 1045. NIRS/PC states in response that "DOE considered the [anhydrous] HF process an appropriate alternative for the PEIS" and "Cogema has operated such a process in France, although it encountered difficulties." NIRS/PC Proposed Findings at 37-38. It must be noted that DOE did not select the anhydrous HF process in either the Paducah or Portsmouth facilities. Furthermore, as even NIRS/PC notes,

Cogema abandoned the anhydrous HF process. Tr. at 1046; NIRS/PC Proposed Findings at 38.

2.14 NIRS/PC alleges inadequacies in the DEIS with regard to analyses of transportation routes, transportation of process chemicals that may be transported for a private deconversion facility, train fires, and scrubber system efficiency. NIRS/PC Proposed Findings at 39-41. The Board finds that these matters are outside the scope of Contention EC-4, as admitted. Furthermore, at this time, no specific site has been selected for the deconversion facility, and the necessary site specific information is not available. Therefore, the Board has found that the analysis conducted by the Staff, as presented in testimony and the DEIS, constitutes the best available analysis given the fact that site specific information is not available. Tr. at 1018-1022.

D. EC-7 (Need For Facility):

2.15 NIRS/PC claims that the testimony of the witness for the NRC Staff, Mr. Nevin, on this issue is inadequate because he did not analyze the costs, prices or the competitive outcome of the entry of the NEF and the USEC centrifuge plant into the enrichment market. NIRS/PC Proposed Findings at 45-46. The question of whether the proposed enrichment facility will be economically feasible does not raise a public health and safety issue within the purview of the NRC. *See, Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, 308 (1997).* The issue before us - the projected impact of the proposed NEF on the global and domestic supply and demand for enrichment services - was thoroughly reviewed by Mr. Nevin. Tr. at 1543-48.

2.16 We find that Mr. Nevin conducted a complete and independent analysis of the relative supply and demand for enrichment services. Mr. Nevin testified that he reviewed the portions of the application and the DEIS which relate to the need for the facility, the relevant documents cited in those documents, and additional information relating to the market for enrichment services in the United States and throughout the world. Tr. at 1542, 1572. On the basis of that information, Mr. Nevin conducted an independent analysis upon which he concluded

that the projections for global supply and demand for enrichment services in the NEF environmental report, showing a close balance of supply and demand were reasonable. Tr. at 1545. Mr. Nevin also confirmed the evaluation of domestic supply and demand in the DEIS. Tr. at 1546-47.

III. CONCLUSIONS OF LAW

3.1 In keeping with NEPA's 'rule of reason,' underlying scientific data and inferences drawn from it through the exercise of expert scientific evaluation may be adopted by the NRC Staff from the NEPA review done by another agency. *Philadelphia Elec. Co.* (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 NRC 1423, 1464-1470 (1982).

3.2 In support of its arguments that the NRC Staff failed to properly analyze deconversion impacts through reliance on other agencies' EISs, NIRS/PC cites to numerous CEQ regulations concerning the need for independent evaluation. While the Commission agrees that CEQ's regulations are entitled to substantial deference where applicable, the Commission is not bound by CEQ regulations that it has not expressly adopted. See *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 725, 743 (3rd Cir. 1989). The Commission stated that the NRC is not bound by those portions of the CEQ's NEPA regulations that have some substantive impact on the way in which the Commission performs its regulatory functions. 49 Fed. Reg. 9352 (Mar. 12, 1984); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-02, 33 NRC 61 (1991). Commission regulations have similar requirements regarding the independent nature of the Staff's evaluation in preparing an EIS, i.e. 10 C.F.R. § 51.70(b), and as noted above, the Board finds that the Staff has appropriately exercised independent judgement in reaching its conclusions that in part incorporates information from DOE's EISs.

3.3 As set forth in our *Order* (Adopting Transcript Corrections Regarding February 2005 Evidentiary Hearing and Closing Record), issued March 22, 2005, the evidentiary record for this portion of the hearing has been closed. Contrary to the assertion by NIRS/PC, Proposed Findings at 53, our action in closing the record on the contested environmental issues is fully consistent with

the provision of the Atomic Energy Act that requires that an environmental impact statement be prepared before the hearing on the issuance of a license for the construction and operation is completed. 42 U.S.C. 2243(a)(2). As we explained in our March 18, 2005, *Memorandum and Order* (Certifying Questions Regarding Mandatory Hearing Procedures), LBP-5-07, we are required to make findings regarding the adequacy of the Staff's NEPA review set forth in 10 CFR Part 51 before a license to operate and construct the proposed facility may issue. Slip op. at 4-5. These findings will be made on our review of the FEIS during the mandatory hearing scheduled to be conducted in November, 2005.

Respectfully submitted,

/RA/

Lisa B. Clark
Counsel for NRC Staff

Dated at Rockville, Maryland
this 4th day of April, 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S REPLY FINDINGS OF FACT AND CONCLUSIONS OF LAW CONCERNING NIRS/PC CONTENTION EC-1 (IMPACTS UPON GROUND AND SURFACE WATER), EC-2 (IMPACT ON WATER SUPPLIES), EC-4 (IMPACTS OF WASTE STORAGE), AND EC-7 (NEED FOR THE FACILITY)" 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 4th day of April, 2005.

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