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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of:

Louisiana Energy Services, L.P.

(National Enrichment Facility)

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Docket No. 70-3103-ML

ASLBP No. 04-826-01-ML

LOUISIANA ENERGY SERVICES, L.P.'S REPLY FINDINGS OF FACT
AND CONCLUSIONS OF LAW REGARDING ENVIRONMENTAL CONTENTIONS

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I. INTRODUCTION

In accordance with 10 C.F.R. § 2.712 and the scheduling order of the Atomic Safety and Licensing Board (“Board”),¹ Louisiana Energy Services, L.P. (“LES”) submits these reply findings of fact and conclusions of law on Contentions NIRS/PC EC-1, EC-2, EC-4, and EC-7 in this proceeding. LES filed its initial proposed findings of fact and conclusions of law on March 14, 2005.² The NRC Staff filed proposed findings and conclusions on the same date.³

¹ Memorandum and Order (Memorializing and Ruling on Matters Raised in Conjunction with August 3, 2004 Conference Call and Setting General Schedule for Proceeding), App. A (General Schedule) (Aug. 16, 2004).

² “Louisiana Energy Services, L.P.’s Proposed Findings of Fact and Conclusions of Law Regarding Environmental Contentions,” dated March 14, 2005 (“LES EC-1, EC-2, EC-4, or EC-7 Findings”).

³ “NRC Staff’s Proposed 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),” dated March 14, 2005 (“Staff Findings”).

LES's initial proposed findings of fact and conclusions of law, as generally supported by the NRC Staff's proposed findings, address and are sufficient to resolve all contested issues raised by Contentions NIRS/PC EC-1, EC-2, EC-4, and EC-7.

Nuclear Information and Resource Service and Public Citizen ("NIRS/PC") filed proposed findings of fact and conclusions of law on March 14, 2005.⁴ As shown below, the NIRS/PC Findings are contrary to the evidentiary record in this proceeding. In fact, the record clearly supports, by a preponderance of the evidence, a determination that with respect to the matters raised in Contentions NIRS/PC EC-1, EC-2, EC-4, and EC-7, the environmental impacts of the proposed National Enrichment Facility ("NEF") have been adequately considered in the NEF Environmental Report ("ER") and the Draft Environmental Impact Statement ("DEIS"), in accordance with the National Environmental Policy Act ("NEPA") and 10 C.F.R. Part 51.

II. FINDINGS OF FACT

The following reply findings address the most significant of the NIRS/PC proposed findings of fact and conclusions of law, *i.e.*, those that are material to the resolution of the four admitted environmental contentions. In a number of instances, NIRS/PC only recite factual information, presumably to provide background or context. In other cases, NIRS/PC present claims that were either previously excluded by the Board as inadmissible, or that are discrete new claims not within the scope of any admitted contention. In either case, such claims, as identified below, are barred from litigation in this proceeding.⁵ In general, NIRS/PC have

⁴ "Proposed Findings of Fact and Conclusions of Law Based Upon Evidentiary Hearing Held on February 7 through 10, 2005 Submitted on Behalf of Intervenors Nuclear Information and Resource Service and Public Citizen," dated March 14, 2005 ("NIRS/PC Findings")

⁵ *See, e.g., Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-20, 56 NRC 147, 150 (2002) (citation omitted) (stating that "[i]t is neither fair

ignored the contrary testimony of LES and NRC Staff witnesses, or taken that testimony out of context. In total, the NIRS/PC proposed conclusions of law are not supported by the record.

A. Contention NIRS/PC EC-1 (“Impacts on Ground and Surface Water”)

1. NIRS/PC Findings 1-7: These proposed findings recite factual information for purposes of background and generally warrant no reply on the part of LES. Two points warrant clarification. In regard to NIRS/PC Finding 1, a total of 14 subsurface borings (not nine) were drilled at the proposed NEF site by Cook-Joyce, Inc. (“CJI”) and MACTEC. LES EC-1 Findings 10-12, at 13-14. Relative to NIRS/PC Finding 2, Mr. Harper testified that Table 3.3-1 of Revision 2 (July 2004) of the ER, indicates that the depth to the Santa Rosa Formation ranges from approximately 1,115 to 1,425 feet (not 800 feet) in the vicinity of the NEF site. Harper/Peery Direct A.43, Tr. 410.

2. NIRS/PC Finding 8: NIRS/PC assert that “examination of the impacts of the NEF should assume some likelihood of leakage,” insofar as “[l]ined basins often leak” because they contain defects that “exist for a variety of reasons,” including manufacturing defects, installation defects, and post-installation deterioration. NIRS/PC further contend that “the witnesses agreed that lined basins do, from time to time, leak.” As to the issue of liner “defects,” LES and NRC Staff witnesses Harper and Toblin both testified that proper liner installation and adherence to industry standards, to which LES has committed, minimize the possibility of leakage. LES EC-1 Finding 31 at 21. Mr. Harper further testified that the liners will be pre-approved by a professional engineer and the New Mexico Environment Department (“NMED”), installed in accordance with NMED guidelines, and subject to post-installation inspection. As such, he does not expect “defects” of the type cited by NIRS/PC to be an issue

nor consistent with our usual practice to allow a last-second infusion of new elements

for the NEF lined basins. Tr. 603-04, 606-07. In any event, Mr. Harper testified that even if the total amount of uranium to be discharged to the TEEB over 30 years were conservatively assumed to infiltrate into the soil over an area equal to that of the TEEB, the concentration of uranium at a depth of 20 feet would be indistinguishable from the concentration of uranium naturally occurring in the NEF site soil. Harper/Peery Direct A.28, Tr. 395; LES Exhibit 10. Also, an assessment of potential runoff contamination levels from the USPSRB showed that the radioactivity level in such runoff would be well within NRC regulatory limits. Harper/Peery Direct A.29, Tr. 396-97.

3. NIRS/PC Finding 9: NIRS/PC state that neither the ER nor the DEIS contains an estimate of the likelihood that one of the lined basins might leak and release water to the underlying alluvium. As demonstrated by the testimony of the LES and Staff experts, such an estimate is not necessary. Specifically, the postulated leakage from the lined basins would not present a significant environmental concern given: the adequacy of the proposed TEEB and USPSRB designs, LES's commitment to properly install and maintain the basin liners, the expected composition of the liquids to be discharged to the basins, favorable site hydrological/hydrogeological conditions, and LES's commitment to implement adequate environmental monitoring and measurements programs. LES EC-1 Findings 25-42, at 19-25. Moreover, such an estimate is not useful because it cannot be made with any degree of certainty. Staff Finding 4.31, at 25-26.

4. NIRS/PC Finding 10: NIRS/PC seek to challenge Mr. Toblin's conclusion that there is no way to predict the probability of leakage from any particular liner, alleging that Mr. Toblin had not tried to locate the necessary information. Mr. Toblin pointed

into a previously admitted contention").

out, however, that the principal document relied upon by NIRS/PC to support their claim that predicting liner leakage is possible (LES Exhibit 72), states that: "No significant numerical relationships between leaks, leak occurrence, and types of leaks can be developed on leaks discovered beneath soil covers because of the limited field testing experience in such environments." Tr. 761. Moreover, no valid conclusions could be drawn relative to the relationship of the liner material to the numbers and types of leaks. Staff Finding 4.31, at 25-26; Tr. 761; LES Exhibit 72, at 39.

5. NIRS/PC Finding 11: NIRS/PC seek to contest Mr. Toblin's opinion that the compacted clay material underlying the Treated Effluent Evaporative Basin ("TEEB") and the Uranium Byproduct Cylinder Storage Pad Stormwater Retention Basin ("USPSRB") would tend to absorb uranium potentially present in the basin liquids, should any leakage occur. Specifically, they assert that Mr. Toblin testified that this opinion was simply "off the top of my head." NIRS/PC, however, fail to reflect the entirety of Mr. Toblin's testimony. While Mr. Toblin agreed that the distribution coefficient (K_d) of uranium varies with the specific form of uranium (*i.e.*, with its oxidation state), Mr. Toblin nonetheless expressed the expert opinion that uranium tends to absorb onto clay in virtually all of its oxidation states. Tr. 720-21.

6. NIRS/PC Finding 12: NIRS/PC claim that LES and the Staff have not clearly stated which groundwater zones will be monitored. This statement is erroneous. Mr. Harper testified that LES plans to install monitoring wells at five locations at the site. These wells will include one background monitoring well located on the northern boundary of the site, between the NEF site and the Wallach quarry; two monitoring wells located on the southern edge of the UBC Storage Pad; one monitoring well located on the south side of the UBC Storage Pad Stormwater Retention Basin; and one monitoring well located on the southeastern corner of the

Site Stormwater Detention Basin. Harper/Peery Direct A.44, Tr. 411-12; Staff Exhibit 1b, at 6-2 (DEIS Figure 6.2).

7. These monitoring wells will be used to monitor the siltstone/silty sandstone unit at approximately 220 feet below ground surface, *i.e.*, the shallowest occurrence of saturated conditions beneath the NEF site. At the up-gradient background monitoring well location, a well will be screened to monitor any water that might occur in the vicinity of the alluvium/Chinle contact, though no water was present in this zone when LES conducted its NEF site investigations. Harper/Peery Direct A.44, Tr. 411-12.

8. NIRS/PC further claim that “water that emerges from the NEF basins and reaches the alluvial-Chinle contact will not be detected by the monitoring system proposed by LES,” and that the NMED will probably require additional monitoring wells to detect leakage perching on the alluvial-Chinle contact.” As Mr. Harper testified, given the proposed design features of the NEF basins, the characteristics of the basins liquids (which are not expected to contain contaminants in levels that exceed applicable regulatory limits), the hydrogeologic characteristics of the site, and LES’s proposed monitoring program, the possibility that seepage or leakage from the NEF basins pose a contamination threat to ephemeral drainages or aquifers is negligible. Harper/Peery Rebuttal A.29, Tr. 466. Nonetheless, according to Mr. Harper, LES will conduct monitoring in accordance with its New Mexico Groundwater Discharge Permit, as issued by the NMED. Therefore, if the NMED chooses to require the installation of any additional wells to monitor the alluvium-Chinle interface, then LES will comply with that requirement. Harper/Peery Rebuttal A.35, Tr. 471. The particulars of LES’s groundwater monitoring program are to be determined by the State of New Mexico through the ongoing

permitting process; they are not a matter within the regulatory jurisdiction of the NRC. Tr. 635-40.⁶

9. NIRS/PC Finding 13: NIRS/PC maintain that LES and the NRC have not explained how LES will distinguish between groundwater contamination caused by other potential sources (e.g., Wallach Concrete, Sundance Services, Waste Control Specialists, and the Lea County Landfill). As stated above, LES will install a background monitoring well in the north sector of the NEF site. Monitoring at this location will occur both in the vicinity of the alluvium/Chinle contact (even though no water was present in this zone when LES conducted its NEF site investigations, nor is any expected to be present) and in the 220-foot groundwater zone. In ascertaining the source of any potential contaminants, LES would consider the types of contaminants involved and the location of their potential sources relative to the direction of any discernible site groundwater flow (i.e., whether the potential sources are up-gradient, cross-gradient, or down-gradient). Harper/Peery Direct A.41, Tr. 409. Again, the specifics of LES's groundwater monitoring program are a matter of state jurisdiction.

10. NIRS/PC Finding 14: NIRS/PC aver that "constituents of the feedstock have [not] been identified." However, LES witness Harper testified LES will use only natural uranium hexafluoride as feed material, and that such feedstock is not expected to contain "other hazardous materials" as NIRS/PC originally asserted. Harper/Peery Direct A.46, Tr. 412-13.

11. NIRS/PC Findings 15 and 16: NIRS/PC state that the water discharged to the Site Stormwater Runoff Detention Basin "may contain a wide variety of contaminants,"

⁶ Cf. *Fansteel Inc.* (Muskogee, Oklahoma Facility), LBP-03-22, 58 NRC 363, 370 (2003) (stating that the NRC does not regulate non-radiological material, and that "a concern that is outside the bounds of the NRC's authority to address can scarcely be deemed of relevance in this adjudicatory proceeding").

including polycyclic aromatic hydrocarbons, aliphatic hydrocarbons, alcohols, pesticides, fertilizers, and “other miscellaneous contaminants resulting from spills and accidents.” NIRS/PC claim that “[t]hese potential contaminants should be included in the Stormwater Monitoring Program.” They also claim that the “[t]estimony established that the proposed monitoring system would not identify various hazardous constituents at their health-based levels.”

12. As reflected in their proposed findings, LES and the NRC Staff have adequately considered the potential environmental impacts associated with site stormwater runoff. LES EC-1 Findings 81-89, at 38-41; Staff Findings 4.56-4.64, at 34-38. This includes sufficient identification of potential contaminants and adequate consideration of LES’s proposed Stormwater Monitoring Program. As stated in Section 6.2.2 of the DEIS, this monitoring program will reflect applicable requirements as determined during the NPDES permitting process. Additionally, the Site Stormwater Detention Basin will adhere to the requirements of the NEF Groundwater Discharge Permit/Plan (vis-à-vis Section 20.6.2.3104 of the *New Mexico Administrative Code*). DEIS (Staff Exhibit 1b), at 6-17 to 6-18. Therefore, to the extent NIRS/PC are proposing additional or different stormwater monitoring parameters, NIRS/PC are raising issues outside the jurisdiction of the NRC. Tr. 635; Staff Finding 4.64, at 37-38.

13. NIRS/PC Finding 17: Citing a reference that is over 40 years old, NIRS/PC claim that “[a]lluvial wells approximately three miles west of the proposed site have been used for domestic purposes.” Mr. Peery testified, however, that the extensive hydrogeological data collected at and near the NEF site do not suggest that saturated conditions exist in the alluvium beneath the NEF site. The existence of small, discontinuous zones of saturation in the alluvium (including “alluvial wells” that might tap such zones) within several miles of the NEF site would not alter this conclusion, especially given the typically localized and

intermittent nature of such occurrences. Therefore, Mr. Peery concluded that any postulated releases from the proposed NEF would not affect the alluvial wells cited by NIRS/PC, to the extent such wells even still exist. Harper/Peery Rebuttal A.6, Tr. 443.

14. NIRS/PC also claim that the City of Eunice had an old public supply well in the Dockum about six miles west of the NEF site, that the Town of Oil Center obtains water from the Dockum Group, and that deeper aquifers within the Dockum Group may be developed for future water supplies. Mr. Peery testified that Eunice now obtains water from the Ogallala Formation, and that Oil Center is located over ten miles northwest (*i.e.*, not downgradient) of the NEF site. Tr. 490. As to the purported development of “deeper aquifers,” the *Lea County Regional Water Plan* specifically states that development of Dockum Group groundwater is “limited specifically to the Santa Rosa sandstone unit” in large part due to “high cost of producing the deep Dockum waters.” LES Exhibit 26, at 6-12. NEF operations are not expected to adversely impact any saturated zones beneath the site, the shallowest of which occurs at approximately 220 feet below ground surface. Mr. Peery and Mr. Toblin agreed that the thick, impermeable Chinle red beds act as a natural barrier to the downward migration of groundwater, and that “groundwater is not likely to travel through the Chinle and reach the Santa Rosa Aquifer.” Harper/Peery Rebuttal A. 6, Tr. 444; Toblin Rebuttal A.8, Tr. 689.

15. NIRS/PC Finding 18: NIRS/PC assert, in part, that Staff witness Toblin “likewise noted that the WCS site has known areas of saturation associated with surface depressions that constitute recharge points.” It is clear from the record, however, that insofar as Mr. Toblin used the term “recharge,” he was not referring to the recharge of continuous saturated zones or aquifers beneath the WCS or NEF sites. Rather, Mr. Toblin was referring to instances of saturation occurring in the alluvium (and moisture in the vicinity of the alluvium/Chinle

contact) beneath the WCS site as a result of certain surface conditions (e.g., playas, surface depressions, and fractured near-surface caliche) that are not known to exist at the NEF site. Tr. 736-739.

16. NIRS/PC Finding 19: NIRS/PC claim that LES witness Peery “conceded that infiltration would take place” in response to a question regarding the postulated formation of perched bodies of water beneath the Site Stormwater Detention Basin. In reality, Mr. Peery testified that the ability of water to infiltrate through the Site Stormwater Detention Basin would depend on a number of factors, such as the amount of precipitation, the air temperature, and the moisture content of the underlying soils. Tr. 519, 523, 529, 532. Further, Mr. Peery emphasized that, to the extent any infiltration of water occurs at the NEF site, the “dominant mechanism” for water movement “is primarily upwards through evapotranspiration.” Tr. 531.

17. NIRS/PC Finding 20: NIRS/PC contend that the Site Stormwater Detention Basin “would function like a playa,” allowing water to leak into the subsurface to form “perched bodies” of groundwater. LES witness Peery explicitly rejected this assertion, stating that he “wouldn’t expect the NEF site to become, or act like, a playa.” Tr. 519-20. Mr. Peery reiterated his opinion that any water bodies that might “temporarily” form “would be subject to evapotranspiration.” Tr. 519-20. In this regard, Mr. Peery added that the lack of groundwater in the alluvium at the NEF site reflects the “dominant” role of evapotranspiration. Tr. 529, 532. In any case, the runoff collected by the Site Stormwater Detention Basin is not expected to contain uranium and will be subject to an NPDES permit.

18. NIRS/PC Finding 21: Citing the DEIS, NIRS/PC state that the NRC Staff “has also stated that perched water bodies could be expected to form at the alluvial-Chinle contact as a result of leakage from the stormwater detention basin and discharges from the septic

systems.” NIRS/PC, however, neglect to mention the Staff’s subsequent statement in the DEIS that “[t]he water would be expected to have limited downgradient transport due to the storage capacity of the soils and the upward flux to the root zone.” DEIS (Staff Exhibit 1b), at 4-13, 4-14. NIRS/PC likewise ignore the extreme conservatism inherent in the Staff’s assessment of the dimensions, flow rates, and potential discharge locations of postulated perched water bodies, as explained by Mr. Peery and Mr. Toblin. LES EC-1 Findings 18, 20, 22, at 16-18; Staff Findings 4.17-4.23, at 20-22.

19. NIRS/PC Finding 22: NIRS/PC assert that Mr. Peery and Mr. Toblin “conceded that groundwater is present in several areas within the WCS site that are not overlain by the caliche.” As Mr. Peery testified, however, to the extent saturated conditions occur beneath the WCS site, “a significant amount of the saturated area [is] underneath the caprock caliche.” Tr. 550. Mr. Peery and Mr. Toblin explained that closed surface depressions also may serve as a mechanism for forming “localized alluvial groundwater systems” at the WCS site, and that these surface depressions are connected to the presence of caprock caliche at or near the surface. Tr. 547, 551, 739; Toblin Rebuttal A.6, Tr. 687, LES Exhibit 3, Tab I, at 17. Such conditions do not exist at the NEF site. Harper/Peery Direct A.39, Tr. 407. Mr. Peery testified that the saturated thickness of any alluvial groundwater zones beneath the WCS site is “quite small” (typically less than 10 feet), and these zones do not extend westward into New Mexico. Tr. 548; LES Exhibit 3, Tab I, at 16 (stating that over 60 previous boreholes and well logs, all of which located the “red bed” surface contact *without* finding saturated conditions, were reported by AM Environmental in 1993 on the WCS site, and by Weaver Boos in 1997 in connection with the nearby Lea County Municipal Landfill site).

20. NIRS/PC Findings 23 and 24: NIRS/PC claim that the “moisture” observed in cuttings from two borings drilled at the NEF site likely represents “residual water from episodic recharge events,” as does the “moist clay” observed in borings drilled in the early 1990’s at the WCS site. As set forth in LES’s and the Staff’s proposed findings, Mr. Peery and Mr. Toblin fully refuted these NIRS/PC claims. LES EC-1 Findings 43-57, at 25-30; Staff Findings 4.36-4.44, at 27-30.

21. NIRS/PC Finding 25: NIRS/PC suggest that “preferential flow paths that result from water ponding in depressions or beneath sand dunes,” as well as from “variations in the permeability of the shallow materials underlying the site.” However, the mere “ponding” of water in depressions does not constitute a “preferential flow path.” As Mr. Peery clarified, to the extent such water might infiltrate into the soil, “[i]nfiltration is just simply water moving through sediments; it is not a preferential flow path.” Tr. 532. With respect to variations in permeability, Mr. Peery stated that “obviously, water would move better through some of these soil types [sand, silt, and silty clay] than others.” Tr. 526. Such variations thus are not tantamount to “fast” flow paths, particularly given the low permeabilities of the Chinle Formation sediments underlying the NEF site. Mr. Peery testified “we don’t have significant preferential flow paths at this [the NEF] site,” including “extensive gravel units that are connected in channels” or “an interconnected fracture network.” Tr. 526-27, 588.

22. NIRS/PC Finding 26: NIRS/PC claim that the “question of recent recharge might be answered using radioisotopes to date moisture in the vadose zone.” Both the LES and NRC Staff experts rejected the asserted need for radioisotope analyses. Harper/Peery Rebuttal A.12, Tr. 450-51; Toblin Rebuttal A.14, Tr. 691-92. In short, Mr. Peery testified that (1) published data obtained from geochemical analyses of groundwater samples taken from the

Lower Dockum Group in the region indicate that recent recharge has not occurred; (2) the use of radioisotopes for hydrogeologic characterizations of the type at issue here is not standard or customary; and (3) the approach suggested by NIRS/PC witness George Rice would yield potentially inconclusive results. Harper/Peery Rebuttal A.12, Tr. 450-51. Mr. Peery explained that when assessing the potential for contamination of ground water, the proper focus is on (1) the potential for the site-specific hydrogeologic setting to limit the downward migration of water (in this case, the low permeability red beds), and (2) the site-specific plans to preclude subsurface contamination. The specific age of the very limited "moisture" observed in some soil boring cuttings is not a relevant or useful inquiry. Harper/Peery Rebuttal A.12, Tr. 451.

23. NIRS/PC Findings 27 and 28: As to the "moisture" in borehole B-9, NIRS/PC state that neither Mr. Peery nor Mr. Toblin knew "whether it was moving upwards or downwards when detected," or "how long it took for the water in borehole B-9 to get to the zone where it was detected." These inquiries are irrelevant insofar as LES and the Staff established that the observation of limited "moisture" in two soil boring intervals is not indicative of "recharge." Harper/Peery Rebuttal A.9, Tr. 447; Toblin Rebuttal A.11, Tr. 690-91. Notwithstanding, Mr. Peery and Mr. Toblin both testified that such moisture is generally subject to upward hydraulic gradients caused by vaporization and evapotranspiration, and that the downward movement of such water would be inhibited by the low permeability of the Chinle red beds. Harper/Peery Rebuttal A.11, Tr. 450; Toblin Direct A.39, Tr. 667.

24. NIRS/PC Finding 29: NIRS/PC assert that LES and the Staff "have conducted no investigation of the hydrologic characteristics of the alluvium," and that hydraulic conductivities are required to estimate the flow rates of water that will purportedly leak from the proposed facility. Mr. Peery testified, however, that there is no need to measure specifically the

hydraulic properties of the alluvium, whether by field methods or laboratory measurements. Harper/Peery Rebuttal A.7, Tr. 445. From the hydrogeologic and geotechnical investigation borings completed by CJI and MACTEC at the NEF site, it is clear that the alluvium or shallow soils overlying the Chinle Formation red beds consist mainly of fine sand and silt, with some limited gravel. Further, based on these characterization efforts and well-established literature values, LES and the NRC Staff reasonably estimated the porosity of these soils to be about 25 to 50 percent, and the saturated hydraulic conductivity of these soils to range from 10^{-5} to 10^{-1} centimeters per second. Harper/Peery Rebuttal A.7, Tr. 445-46, LES Exhibit 1, at 3.4-14. Additionally, the NRC Staff did, in fact, provide estimates of the flow rates of postulated perched water bodies in the alluvium, and explained those estimates in response to Basis A of Contention NIRS/PC EC-1. The Board ruled that the adequacy or reasonableness of those estimates is not litigable in this proceeding given the failure of NIRS/PC to amend their contention in response to the Staff's explanation of its estimates.⁷

25. NIRS/PC Finding 30: NIRS/PC again misapply the term "recharge," stating that it means "infiltration beneath the base of the root zone." Mr. Peery and Mr. Toblin agreed that recharge refers to the entry into the saturated zone, especially an aquifer, of water made available at the water-table surface. Harper/Peery Rebuttal A.9, Tr. 447; Toblin Direct A.33, Tr. 666. The presence of moisture in Boreholes B-2 and B-9 at the NEF site, however, is not indicative of "recharge." As Mr. Peery explained, the "local recharge" referred to in the Lehman-Rainwater report (LES Exhibit 3, Tab I) is "recharge to the alluvial sediments near the WCS site," where there are depressions in the ground surface and caprock caliche is at or near

⁷ Memorandum and Order (Ruling on In Limine Motions and Providing Administrative Directives) (Jan. 21, 2005) (unpublished), at 4-5.

the surface. Tr. 546. The report thus refers to recharge within a specific area, not throughout the entire southern Lea County area in which alluvial sediments overlie the Chinle red beds. Tr. 547. *See also* LES Reply to NIRS/PC Finding 22, *supra*.

26. In addition, while NIRS/PC state that Cook-Joyce reported saturated conditions in the OAG unit (alluvium) in seven boreholes at the WCS site, they fail to mention that such conditions were encountered in only “*seven of the 172 borings* located in the RCRA permitted area and the NMB series borings located immediately to the west.” Cook Joyce referred to the seven boreholes as “isolated locations . . . in the area of the higher elevations of the red bed ridge,” and concluded that “the groundwater is an isolated occurrence.” LES Exhibit 3, Tab O, at 6-2.

27. Finally, NIRS/PC assert that the Terra Dynamics report for WCS (LES Exhibit 3, Tab M) states that recharge to the upper Dockum Aquifer is provided by vertical infiltration of precipitation from the overlying units of the Quaternary-Tertiary Aquifer and High Plains Aquifer. However, the report then states that such recharge occurs where permeable zones within the upper Dockum Group are “in contact with” those overlying aquifer units. LES Exhibit 3, Tab M, at VI.-B.-5. This is not the case in the NEF site vicinity. LES Exhibit 3, Tab M, at VI.B.-2 to VI.-B.3 (indicating that neither the Quaternary-Tertiary Aquifer nor High Plains Aquifer is present at the WCS site); Tab O, at 3-3 to 3-4. NIRS/PC simply ignore this fact.

28. NIRS/PC Finding 31: NIRS/PC claim that Mr. Peery noted a “repeated pattern” of moisture at the alluvium-Chinle contact in boring logs attached to the 1993 Holt Report (LES Exhibit 3, Tab G), and that Mr. Toblin “acknowledged the presence of water above the Chinle.” Again, however, NIRS/PC ignore the associated testimony of the LES and Staff experts. Mr. Peery stated that that the “mention of moisture at the alluvial contact . . . is almost

invariably followed by the mention of dry Chinle below it, indicating that water does not migrate vertically through the Chinle red bed surface.” Tr. 544. Mr. Toblin reached the same conclusion in response to an inquiry from the Board. Tr. 726-27.

29. NIRS/PC Finding 32: NIRS/PC suggest that, in its Groundwater Discharge Permit Application, LES has “conceded” that water emerging from the site engineered basins “would infiltrate to the alluvium and recharge the groundwater system.” However, Mr. Harper explained that LES included this unlikely scenario in the permit application as a conservatism for purposes of its Section 20.6.2.3109.C “Approval Demonstration.” Harper/Peery Rebuttal A.32-A.34, Tr. 467-70; LES Exhibit 4, at 17 (stating that “. . . *even if* any of the infiltrated waters reach the ground water, the applicable ground water standards in 20.6.2.3103 NMAC will be met”). In other words, the purpose of the statements cited by NIRS/PC is to show that “irregardless of whether the water infiltrates or evaporates, or evapotranspires, [] the impact on groundwater would be negligible,” such that the NMED should approve the groundwater discharge permit. Tr. 595-96. Mr. Harper further testified that “migration of infiltrating water to a depth of approximately 220 feet below ground surface is not the expected outcome” due to the effect of evapotranspiration. Harper/Peery Rebuttal A.34, Tr. 470.

30. NIRS/PC Finding 33: NIRS/PC contend that the Walvoord model cited by LES and the NRC Staff has not been shown to apply specifically to the NEF site, and that the model does not account for “fast flow paths, preferential flow paths, fractures, or macropores.” While Mr. Peery agreed that the Walvoord model is not specific to the NEF site and contains simplifying assumptions, he testified that “because it is a study of thick desert soils, it is applicable to the NEF site,” and sheds light on the mechanism by which water that might

otherwise infiltrate is removed from the vadose zone. Tr. 523-24. Mr. Peery also testified that the sensitivity analysis performed by the Walvoord team (which involved varying soil type, saturated permeability, porosity, geothermal gradient, water table depth, fixed root zone matric potential, and vapor diffusion rate) adequately accounts for potential directional and spatial variations in permeability/hydraulic conductivity of the type that reasonably might be expected to occur at the NEF site. Harper/Peery Rebuttal A.10, Tr. 448-49, Tr. 525.

31. NIRS/PC Findings 34 and 35: These NIRS/PC proposed findings relate principally to the issue of whether the NRC Staff adequately accounted for the presence of gravel in assessing the movement of postulated perched bodies of water beneath the NEF site. As stated above, the adequacy or reasonableness of the assumptions underlying the Staff's calculations is not litigable under Contention NIRS/PC EC-1, which alleges only an omission that the Staff has since cured. Notwithstanding, Mr. Toblin and Mr. Peery testified that the hydraulic conductivity value used by the Staff, 0.01 cm/sec (which is consistent with well-established literature values for a clean sand), is on the conservative side, as the alluvium underlying the NEF consists mainly of fine sand and silt. Harper/Peery Direct A.53, Tr. 417-18; Toblin Rebuttal A.10, Tr. 690. Also, Mr. Peery and Mr. Toblin testified that there is no evidence of "continuous" layers or channels of gravel that might serve as "fast flow paths," as suggested by NIRS/PC. Tr. 498-99, 706-09; Rice Rebuttal A. 23, Tr. 818-19.

32. NIRS/PC Findings 36 and 37: These findings relate to the issue of whether postulated leakage or seepage from the NEF engineered basins or septic leach fields could affect potential users of alluvial water "downgradient" of the site in the vicinity of Monument Draw. As set forth in LES's proposed findings of March 14, 2005, the testimony of

the LES and Staff witnesses demonstrates that this NIRS/PC concern lacks merit. LES EC-1 Findings 14-24, at 15-19.

33. NIRS/PC Finding 38: NIRS/PC claim, without any basis, that “[w]ater released from the NEF may penetrate through the alluvium and through the Chinle to the Santa Rosa Formation,” and that “the NEF has not been characterized as fully as nearby sites.” As set forth in LES’s proposed findings of March 14, 2005, the hydrogeology of the NEF site and site vicinity have been well characterized. LES EC-1 Findings 6-13, at 12-15. As Mr. Peery testified, “there isn’t a real need to drill 100 boreholes at the NEF site to document [the] hydrogeologic setting,” insofar as the borings completed by LES at the proposed NEF site “confirm that it’s very similar to the other sites.” Tr. 507. Additionally, Mr. Peery and Mr. Toblin both testified that it is highly unlikely that groundwater would travel vertically downward through the Chinle Formation and reach the Santa Rosa Aquifer, which is located over 1,100 feet below ground surface. Assuming such downward flow occurred, the travel time would be on the order of thousands of years, making it unlikely that any potential contaminants would reach the Santa Rosa. Harper/Peery Direct A.44, Tr. 411; DEIS (Staff Exhibit 1b), at 3-36.

34. NIRS/PC Findings 39 and 40: These findings relate to the alleged lack of information (or accurate information) regarding two water-bearing units beneath the site (*i.e.*, a sandstone unit located approximately 600 feet below the NEF site and the Santa Rosa Aquifer at roughly 1,100 feet below ground surface). In view of the Board’s rulings of January 21, 2005 and February 4, 2005, these findings raise inadmissible issues.⁸

⁸ See Memorandum and Order (Ruling on In Limine Motions and Providing Administrative Directives) (Jan. 21, 2005) (unpublished), at 3-4; Memorandum and Order (Ruling on In Limine Motions Regarding Prefiled Direct and Rebuttal Testimony and Providing Administrative Directives) (Feb. 4, 2005) (unpublished), at 2.

35. NIRS/PC Findings 41 to 48: These proposed findings relate generally to the NIRS/PC assertions that LES and the NRC Staff have relied on “limited permeability measurements” and have not adequately evaluated the potential for fractures to act as “preferential flow paths.” As set forth in LES’s and the Staff’s proposed findings of March 14, 2005, Mr. Peery and Mr. Toblin fully refuted these unsubstantiated NIRS/PC claims. LES EC-1 Findings 58-80, at 30-38; Staff Findings 4.45-4.55, at 30-34. Certain claims made by NIRS/PC in their proposed findings, however, warrant some additional clarification.

36. First, NIRS/PC claim that Mr. Peery and/or Mr. Toblin could not state whether fractures described in the 1993 Holt report boring logs were localized, interconnected, or free of gaps through which water could pass, or exactly when minerals were deposited in those fractures. These assertions are plainly mischaracterizations of the record. Mr. Peery testified quite conclusively that the mere mention of fractures, slickensides, and mineral veins in the Holt boring logs does not provide evidence of fast flow paths or networks of interconnected fractures, especially given the lack of any associated moisture. Tr. 573-85. Indeed, with respect to the Holt report boring logs, Mr. Peery stated: “I think the data really speaks for itself.” Tr. 588. Mr. Toblin agreed that the data suggest a lack of fast flow paths or interconnected fractures. Tr. 756-749.

37. Second, Mr. Peery noted that in suggesting the use of angled borings, Mr. Rice assumes that any fractures that might exist at or near the NEF site would be vertically oriented. In fact, such fractures are more likely to be obliquely oriented, making the vertical borings a better method for detecting the presence of fractures. Harper-Peery Rebuttal A.13, Tr. 452-53.

38. Third, Mr. Peery testified that the delayed or slow entry of groundwater into WCS boring/monitor wells B-20 (11-D) and B-21 (9-G(3)) is not indicative of “episodic” groundwater flow along fractures or fast flow paths. Rather, it reflects groundwater flow through low-permeable sediments under confined conditions. Harper/Peery Rebuttal A.18, Tr. 456-57; Tr. 591-92. Mr. Peery explained that when a boring/well is installed in a low-permeability unit, particularly using the air rotary drilling method (which generates heat and pressure that can inhibit groundwater flow from the formation into the boring), it is not unusual for there to be a delay in the entry of groundwater into the boring/well. In fact, it is often necessary to add distilled water and to repeatedly bail or pump the well to induce formation flow into the well. Harper/Peery Rebuttal A.18, Tr. 456.

39. NIRS/PC Findings 49-50: NIRS/PC assert that LES should perform fracture studies and measure the stable isotope ratios and ages of groundwater beneath the site. NIRS/PC, however, have provided no compelling basis for the opinion that fractures or preferential flow paths could allow water flow into the saturated zones in the Chile, or from the Chinle to the Santa Rosa Aquifer. Harper/Peery Rebuttal A.25, Tr. 463. Indeed, the evidence suggests otherwise. CJI’s reference to the 1986 Dutton and Simpkins study (LES Exhibit 6) reflects its applicability to the NEF/WCS site vicinity. LES Exhibit 3, Tab O, at 3-3 to 3-4. That study supports the conclusion that cross-formational flow or recharge of the Dockum Group water-bearing units or aquifers is not occurring in the site vicinity. LES Exhibit 3, Tab O, at 3-3 to 3-4.

40. NIRS/PC Finding 51: Mr. Harper and Mr. Peery testified that the one-time detection of a pesticide (4,4'-DDD) in MW-2 is not indicative of the existence of fast flow paths. No pesticides or other contaminants were detected in MW-2 in three quarterly sampling

events conducted since the installation of the well. Harper/Peery Direct A.36, Tr. 403. Indeed, in Finding 51, NIRS/PC posit that “the pesticide detection was probably caused by contaminated surface soils that were introduced into MW-2 as it was drilled,” *not* by a “fast flow path.”

41. NIRS/PC Finding 52: As to potential use of the Santa Rosa Aquifer for domestic and livestock purposes, Mr. Peery agreed that the Santa Rosa water has been used in the southern part of Lea County. Tr. 485. However, Mr. Peery explained that “the main reason that [the Santa Rosa] is the principal aquifer in selected portions of the southern part of the county is that there is little shallow groundwater present in the southern part of the county,” and that people seeking domestic water supplies must therefore exploit the deeper Santa Rosa Aquifer. Tr. 485-86. Mr. Peery clarified that the City of Jal abandoned use of their Santa Rosa well decades ago and now relies solely on the Jal Underground Water Basins. Tr. 486.

42. Also on this point, Mr. Peery testified that WCS analysis of Santa Rosa water shows that the total dissolved solids (“TDS”) 1,370 mg/L exceeds New Mexico and EPA TDS limits (1,000 and 500 mg/L, respectively), and that well yields in the Santa Rosa are generally fairly low, factors which would appear to militate against extensive use of Santa Rosa water. Indeed, Mr. Toblin noted that the Town of Oil Center is the only local community that currently pumps even part of its water from the Santa Rosa. Toblin Rebuttal A.9, 690; LES Exhibit 26, at 6-12. In any event, Mr. Peery testified that “by virtue of its great depth below ground surface (over 1,000 feet) and confinement by thick beds of low-permeable Chinle red bed clay, the Santa Rosa will not be impacted by NEF operations.” Harper/Peery Direct A.48, Tr. 414. Mr. Toblin agreed. Toblin Rebuttal A.8, Tr. 689.

B. Contention NIRS/PC EC-2 (“Impacts Upon Water Supplies”)

1. NIRS/PC Findings 49-51:⁹ These proposed findings recite factual information for purposes of background and require no reply on the part of LES.

2. NIRS/PC Finding 52: NIRS/PC state that the peak usage rate of the NEF would be 8.7% of current usage for the Hobbs system and 36% of the current usage for the Eunice system. The LES expert panel addressed the meaning of “peak usage” and its relevance to the water supply contention. *See* LES EC-2 Findings 8, 12, at 44-46. The 540,000 gallon-per-day figure cited by NIRS/PC is the estimated limited-time peak water usage rate of 378 gallons per minute extrapolated over a 24-hour period, and thus does represent routine facility operations. In any event, Mr. Stokes testified that “[t]he peak demand really doesn’t have an effect on water supply, [and] is averaged out,” and it “is really a question of the infrastructure that the cities will put in to supply the water.” Tr. 1249-50.

3. NIRS/PC Finding 53: Citing deposition testimony, NIRS/PC claim that Mr. Krich stated that it is necessary for the NEF to have uninterrupted water supply for purposes of “asset protection.” This issue likewise is an infrastructure concern that is in no way material to the resolution of the water supply issue central to Contention NIRS/PC EC-2.

4. NIRS/PC Finding 54: NIRS/PC allege the lack of “modeling analyses” to support testimony about the ability of the municipal water systems to supply the NEF without significantly affecting those supplies, other users, water levels, or the long-term productivity of the Hobbs well field. The LES witnesses provided sufficient bases for their conclusions. In

⁹ It appears that NIRS/PC have incorrectly numbered these proposed findings, *i.e.*, the first finding under Contention NIRS/PC EC-2 should be numbered “53” instead of “49.” To avoid any confusion, however, LES refers to the numbered paragraphs as they appear in the NIRS/PC Findings.

short, the LES panel demonstrated that because the projected NEF water usage is *de minimis* relative to the amount of water currently used by, and available to, the municipalities, such modeling analyses are unnecessary. LES EC-2 Findings 15-27, at 47-52. Nevertheless, the NRC performed such an analysis, which showed that the effect on water levels in the Hobbs well field would be small. Staff Findings 4.85-4.87, at 46-47.

5. NIRS/PC Finding 55: NIRS/PC assert that “the issue here is not impact on State of New Mexico water policies but impact upon the environment.” NIRS/PC miss the point. The policies and regulations implemented by the New Mexico Office of the State Engineer (“NMOSE”) are intended to preclude non-beneficial uses of groundwater, and hence, to preclude adverse impacts upon New Mexico water supplies. See LES EC-2 Findings 28-30, at 52-53.

6. NIRS/PC Finding 56: NIRS/PC claim that “it is also acknowledged that one may own water rights but lack the water to use such rights.” NIRS/PC flat-out ignore the testimony of Mr. Peery, who noted that while this statement may be true, it does not apply to the Cities of Hobbs or Eunice. Tr. 1265-66.

7. NIRS/PC Findings 57: NIRS/PC state that the NMOSE groundwater model predicts that the saturated thickness will decrease by another 50 to 100 feet in the vicinity of the New Mexico-Texas state line during the next 40 years. NIRS/PC also state that the predicted draw-downs may render existing municipal well fields incapable of supplying sufficient potable water. As Mr. Peery testified, however, that model conservatively assumes “more pumping from Texas than is probably actually occurring” and “over-predicts draw-downs in much of the County.” Tr. 1289-90. This is evident from comparison of historic draw-downs to simulated draw-downs. Tr. 1289-90. Mr. Stokes noted that the City of Hobbs is in “a very

good situation” with a well field that “sits over a good part of the aquifer,” ample water rights appropriations, and flexibility in locating new wells. Tr. 1287-88.

8. NIRS/PC Findings 61 and 62: These findings relate to the NMOSE model prediction that the saturated thickness in the vicinity of the Hobbs well field will be approximately 38.2 feet by 2040. As LES’s experts testified, the NMOSE model conservatively over-predicts draw-down, and the NEF contribution to such draw-down would be minimal. Mr. Peery’s statement that the NMOSE model “still indicated saturated thicknesses of approximately 50 to 150 feet in the Hobbs well field” in 2040 is a correct one, and is not inconsistent with the 38.2-foot saturated thickness cited by Staff witness Toblin. Indeed, Mr. Toblin testified that for purposes of his simulation, he “chose a cell [within the Hobbs well field] that had minimum saturated thickness for conservatism.” Tr. 1328-29. The NMOSE report, however, states: “In the vicinity of Hobbs, for the year 2040, the remaining saturated thickness ranged from between 50 and 100 feet to the north to less than 50 feet south of the city.” Staff Exhibit 21, at ix. NIRS/PC acknowledge this fact in their own Proposed Finding 60.

9. NIRS/PC Findings 63-64: NIRS/PC seek to challenge the testimony of Mr. Peery and Mr. Stokes regarding the future use of groundwater from the Lea County Underground Water Basin for agricultural purposes (particularly use by entities located in Texas). In so doing, NIRS/PC cite an excerpt from the *Lea County Regional Water Plan* (LES Exhibit 26). As Mr. Stokes explained, however, the 360,000 acre-feet per year of usage referred to in the plan is essentially a worst-case scenario assumed largely for political purposes. LES EC-2 Finding 24, at 51; Tr. 1267-70.

10. NIRS/PC Finding 65: NIRS/PC state, in conclusory fashion, that “[t]he State Engineer’s model is not a conservative one.” As Mr. Toblin testified, he used the same

water usage rate applied by the NMOSE, the entity charged with administering water rights in New Mexico, in its model. Tr. 1341-43; Staff Finding 4.86, at 46. As stated above, when viewed relative to historical data, the NMOSE model often over-predicts draw-downs.

11. NIRS/PC Finding 66: NIRS/PC refer to the City of Hobbs' "optimistic" population growth projection of 1 percent per year, which the City assumed for purposes of an infrastructure (wastewater) analysis. As Mr. Woomer and Mr. Krich testified, the City's historical population growth rate (approximately 0.25 percent over the last 30 years) is much less. Tr. 1272. Notwithstanding, Mr. Stokes testified that even with a 1 percent per annum increase, the City of Hobbs could still easily meet the NEF's *de minimis* water usage of 71 acre-feet per year. Tr. 1277-78.

12. NIRS/PC Finding 67: NIRS/PC contend that the NMOSE model of water usage cautions that "[t]he annual rate of water level decline could increase if additional permitted acreages are brought back into irrigation." Mr. Stokes, however, established that this is unlikely. Tr. 1268.

13. NIRS/PC Finding 68: NIRS/PC contend that in view of the "prospect" for greater water usage reflected in the NMOSE model and Lea County Regional Water Plan, LES should prepare "low, medium, and high estimates of water usage." This "finding" constitutes a discrete new claim that is not part of the admitted contention. Accordingly, it is not subject to litigation in this proceeding. *See Private Fuel Storage*, CLI-02-20, 56 NRC at 150.

14. NIRS/PC Finding 69: NIRS/PC state that comparing the projected NEF lifetime water usage to the quantity of Ogallala reserves with the State of New Mexico is not a "relevant scientific ratio." Mr. Toblin explained that such a comparison shows that the NEF would not have a region-wide impact. Tr. 1336. Further, as LES's experts testified, NEF water

usage, even if viewed on a smaller scale, *i.e.*, relative to the Lea County Underground Water Basin or the Hobbs well field, is still negligible. Krich et al. Direct A.48, Tr. 1209-11.

C. Contention NIRS/PC EC-4 (“Impacts of Waste Storage”)

1. NIRS/PC Finding 70-75: These proposed findings recite factual information for purposes of background and generally warrant no reply on the part of LES.
2. NIRS/PC Finding 76: NIRS/PC suggest that the Final Environmental Impact Statement for the Claiborne Enrichment Center (“CEC FEIS”) “could not satisfy the requirements of NEPA for a deconversion plant for the NEF”, on the ground that it (i) “contains no analysis of a process that generates AHF”; (ii) analyzes deconversion of UF₆ to U₃O₈, but not to “any other conversion product”; (iii) assumes the use of a deconversion process that generates calcium fluoride as a byproduct; and (iv) “analyzes impacts from the routine operation of a deconversion facility but does not analyze off-normal or accident conditions.” This proposed finding ignores the fact that, as Rod Krich, LES's expert witness, testified, the conclusion that he reached that the generic environmental impacts of a deconversion facility have been adequately evaluated was based upon not only the CEC FEIS, but also on the two site-specific environmental impact statements for deconversion facilities to be constructed at Paducah (“Paducah FEIS”) and Portsmouth (“Portsmouth FEIS”), as well as the Final Programmatic Environmental Impact Statement for Alternative Strategies for the Long-Term Management and Use of Depleted Uranium Hexafluoride (“DOE PEIS”). Krich Direct Answer 14, Tr. 889. Mr. Krich testified “that the environmental impacts associated with the deconversion of depleted uranium had previously been evaluated thoroughly by the NRC and DOE, that *these previous evaluations* appropriately bound the impacts that might be associated with a private sector deconversion facility and, for these reasons, *it was appropriate to rely on those evaluations in*

the LES Environmental Report for the National Enrichment Facility.” Krich Direct A.14, Tr. 889-90 (emphasis added). Thus, Mr. Krich testified that the environmental evaluations (CEC FEIS, Portsmouth and Paducah EISs, and DOE PEIS), *taken together*, adequately bound the generic environmental impacts of a deconversion facility. These evaluations, taken together, include a thorough discussion of both routine operation of a deconversion facility, as well as off-normal or accident conditions (Krich Direct A.18, Tr. 893, and A.21, Tr. 895, referring to the discussion in the two site-specific EISs and the PEIS of normal operational impacts, as well as accident impacts associated with a deconversion facility, including transportation impacts). Similarly, the DOE PEIS contains a comprehensive discussion of the environmental impacts associated with the possible use of a deconversion option that results in anhydrous hydrofluoric acid (“AHF”) (Krich Direct A.23, Tr. 896-97, Krich Rebuttal A.6, Tr. 912, referring to the discussion of the AHF option in the DOE PEIS), as well as the option that would generate calcium fluoride. LES Ex. 18, at 2-9. Finally, as to NIRS/PC's argument that the CEC FEIS only considers deconversion of DUF_6 to U_3O_8 , but not to "any other conversion product", it bears repeating that this is precisely what LES intends to do. Krich Direct A.10, Tr. 888. Notwithstanding NIRS/PC's repeated insistence that the UO_2 option should be pursued, LES intends to deconvert its DUF_6 to U_3O_8 and believes that this option has been thoroughly evaluated in both the CEC FEIS (as NIRS/PC acknowledge) and in the DOE PEIS. NIRS/PC ignore the fact that DOE's PEIS includes an extensive evaluation of both the U_3O_8 and UO_2 options. LES Ex. 18, at 2.9 (“Two forms of uranium oxide U_3O_8 and UO_2 were considered”). In short, the environmental impacts associated with the foregoing matters have been adequately considered in the environmental evaluations relied on by LES in its license application.

3. NIRS/PC Finding 77, 79-80: NIRS/PC contend in these proposed findings that the environmental evaluations referenced by LES and the NRC staff cannot be relied on because LES and the NRC staff “had not performed any calculations nor checked any of the calculations reflected in the DOE EISs”. Mr. Krich testified that he reviewed the information in the DOE EISs and found the information to be both pertinent and reasonable for the type of facility that might be required for the deconversion of the NEF DUF₆. Tr. 968, 970-71. Mr. Krich further testified that if, in his review, he had found a conclusion which appeared “out of line”, he would either contact the author to question him about the analysis, or conduct his own analysis. Tr. 971. As noted, Mr. Krich, in his review of the DOE EISs, found the information in those documents to be both pertinent and reasonable as it related to the environmental impacts of constructing and operating a deconversion facility. Dr. Palmrose testified that, based upon his expertise and review of the DOE EIS's, he concluded that they were a reasonable assessment of the deconversion of DUF₆ to U₃O₈. Tr. 1044. Additionally, the Commission's “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,” (“Hearing Order”) published in the Federal Register on February 6, 2004, explicitly provides that the NRC staff may consider the DOE EIS in preparing the Staff's EIS. Tr. 955. Nowhere in the Commission's Hearing Order is it suggested that staff may only rely on such EISs after it independently verifies all of the data in those EISs. Indeed, NIRS/PC seem to suggest, without bothering even to identify an instance where the evaluations relied upon are in their view factually incorrect, an approach that would have the staff and the applicant independently reconstruct the environmental evaluations. Not only do NIRS/PC fail to cite a legal basis for such a conclusion, but the import of the suggested approach would be to read out of the Commission's

Hearing Order entirely the provision that says that the Staff may consider the DOE EISs. For the foregoing reasons, the proposed findings in 77, and 79-80 are without merit.

4. NIRS/PC Finding 78, 85-89: NIRS/PC, in these proposed findings, contend that the environmental impacts of a deconversion facility that employs the AHF option have not been adequately evaluated. LES addressed this issue in its Proposed Findings. LES EC-4 Findings 17-19, at 60-61. No additional substantive argument is advanced by NIRS/PC in its proposed findings 78, 85-88, and hence no further response is necessary.

5. NIRS/PC Finding 81: This finding cites factual information for purposes of background and generally warrants no reply by LES.

6. NIRS/PC Finding 82-84: NIRS/PC contend that "the ER does not refer to the DOE PEIS," implying that it is therefore improper to rely on the DOE PEIS. Mr. Krich testified that the Paducah and Portsmouth EISs explicitly incorporate the DOE PEIS by reference. Tr. 986. It was thus necessary only to reference the Paducah and Portsmouth EISs in LES's license application, as they, in turn, incorporated the DOE PEIS by reference. Mr. Krich testified that this is a common practice. Tr. 986. NIRS/PC further contend that it is not appropriate to rely on the incorporation by reference of the DOE PEIS in the Paducah and Portsmouth EISs "because the reference in those DOE EISs is merely historical and does not incorporate substance." As Mr. Krich testified, the two site-specific EISs explicitly state that they "incorporate[], by reference, the programmatic analysis, as appropriate, from the DUF₆ PEIS published by DOE in 1999." Tr. 986. Specifically, both EISs state that "[t]he project-level review in these conversion facility EISs incorporates, by reference, the programmatic analysis, as appropriate, from the DUF₆ PEIS published by DOE in 1999." LES Ex. 16, at S-13; LES Ex. 17, at S-13. Nowhere do these two site-specific EISs suggest what NIRS/PC would have this Board

now adopt as a finding, that the incorporation of the PEIS in the site-specific EIS's was merely a historical reference. Finally, NIRS/PC contend in this proposed finding that "Mr. Krich reviewed parts of the DOE PEIS, but he did no calculations to check its results. This issue is addressed in paragraph 3, above.

7. NIRS/PC Finding 90: NIRS/PC simply recycle the very same argument in this proposed finding that was advanced at the evidentiary hearing concerning the alleged need "to consider impacts of lower filter efficiency in projecting impacts of deconversion." LES addressed this matter previously in its Proposed Findings and no further response is necessary here. LES EC-4 Findings 24-25, at 63-64.

8. NIRS/PC Finding 91: In this proposed finding, NIRS/PC contend that the DEIS does not analyze specific transportation routes. As Dr. Makhijani, NIRS/PC's expert witness acknowledged in the evidentiary hearing, the issue that was originally raised by NIRS/PC related to transportation distances, not specific transportation routes. Tr. 1135-37. Indeed, under questioning by counsel for LES, Dr. Makhijani further acknowledged that "transportation distances actually shouldn't have been here because the DOE considers different transportation distances." Tr. 1136. Having thus acknowledged that DOE adequately considered the issue of transportation distances, Dr. Makhijani then sought in the evidentiary hearing to shift the focus of the issue, stating that "what it should have actually said is the specific routes." Tr. 1137. In short, what NIRS/PC's witness improperly sought to do was to inject an entirely new issue into this proceeding, the issue of transportation routes, that had not been previously raised as a contention or in Dr. Makhijani's direct or rebuttal testimony. For this reason, the effort to shift the focus from transportation distances to specific transportation routes must be rejected by the Board as a transparent effort to raise a new issue without satisfying the applicable criteria for

raising late-filed contentions. Beyond this, however, as Mr. Krich testified, if LES elects to pursue a private sector deconversion facility, further environmental evaluation would be undertaken of the site-specific impacts of such a facility, including issues related to the environmental impacts of transportation routes, as part of the licensing process once a specific site is identified. Krich Direct, Tr. 894.

9. NIRS/PC Finding 92: In this proposed finding, NIRS/PC contend that the DOE PEIS does not consider all process chemicals that might be transported for a private deconversion facility, referencing specifically, anhydrous ammonia. As Mr. Krich testified, the DOE PEIS evaluated the types of materials that would be transported if LES were to pursue the private sector deconversion option. Krich Direct, A.25, Tr. 898. As to the transportation of anhydrous ammonia, NIRS/PC appear to acknowledge in this proposed finding that the site-specific EIS's did, in fact, consider the issue of transporting anhydrous ammonia. The only issue that NIRS/PC appear to be raising is that the site-specific EISs considered larger numbers of shipments than was considered in the PEIS. Oddly, NIRS/PC do not contend that the evaluation in the site-specific EISs of transportation of anhydrous ammonia is in any way deficient. As LES has noted in its reply to NIRS/PC finding 76, LES relied not only on the PEIS, but also on the site-specific EISs. In addition, however, the PEIS includes extensive discussion of the transportation of ammonia. Tr. 1158-59. Indeed, NIRS/PC's expert witness, Dr. Makhijani acknowledged that it was merely his "inference" that the type of ammonia that was analyzed was aqueous, not anhydrous. Tr. 1159. Yet nowhere in the PEIS does it indicate that DOE only analyzed the aqueous form of ammonia. Because the site-specific EISs, as NIRS/PC acknowledge in this proposed finding, analyzed a large number of anhydrous ammonia

shipments, and further because the DOE PEIS also analyzed ammonia shipments, LES submits that an adequate evaluation of this issue has been undertaken.

10. NIRS/PC Finding 93: In this proposed finding, NIRS/PC contend that DOE's transportation analyses "apparently did not report impacts of a serious train fire, much less a bounding accident like the Baltimore CSX train fire of mid-July 2001 or the January 6, 2005 rail accident in Graniteville, S.C. involving release of chlorine gas . . ." Mr. Krich testified that the transportation analyses in the DOE PEIS encompass both normal operations and accident conditions. Krich Direct, A.27, Tr. 898. Indeed, the analysis in the DOE PEIS is a comprehensive evaluation of transportation impacts that is based on national average accident occurrence rates and fatality rates for truck and rail shipments. LES Exhibit 18, p. 5-48-51; p. J-10. The DOE PEIS explicitly states that it examined "the accident estimated to have the highest potential consequences", a severe rail accident involving a release from a railcar containing anhydrous HF. LES Exhibit 18, p. 5-49. Counsel for NIRS/PC, Lindsay Lovejoy, asked Mr. Krich about the specific reference cited above, noting in his question that the DOE analysis estimated that up to 30,000 persons might experience irreversible adverse effects and that up to 300 fatalities could occur. Tr. 971-72. In fact, Mr. Lovejoy's question about the DOE analysis in the PEIS itself suggests that the DOE analysis bounds the impacts that NIRS/PC assert should be evaluated based upon (*i.e.*, nine people died, 250 were injured, and 5,400 were evacuated in the Graniteville rail accident). Moreover, as noted in LES's response to proposed finding 91, if LES decides to pursue a private sector deconversion facility, further evaluation of the environmental impacts of the sited deconversion facility, including impacts associated with site-specific transportation-related concerns of the type raised by NIRS/PC, would be undertaken as

part of the licensing process at the time that a specific site is identified and specific transportation routes are known.

11. NIRS/PC Finding 94-95: NIRS/PC simply repeat the very same arguments advanced at the evidentiary hearing with regard to the alleged lack of DOE or NRC guidelines for free release of contaminated hydrofluoric acid or calcium fluoride and the need to assess the impacts of the treatment and disposal of CaF₂ as low-level waste. These issues are addressed in LES Proposed Findings and no further response is necessary here. LES EC-4 Findings 26-30, at 64-66.

D. Contention NIRS/PC EC-7 (“Need for the Facility”)

1. *Basis A: “Need” for Enrichment Capacity*

1. NIRS/PC Finding 97: In this proposed finding, NIRS/PC appear to fault the DEIS because the discussions of purpose and need for the proposed action in that document refer only to the national energy policy interest in a diverse supply of enrichment services and mention, “without supporting information,” possible disruptions in production from the Paducah gaseous diffusion plant and the supply of downblended uranium from Russia. In fact, however, NIRS/PC provide no basis for arguing that further supporting information is required. Neither LES nor the NRC Staff must prove that these disruptions will occur to support a “need” based on assuring a diverse and reliable supply in the face of reasonably foreseeable scenarios. Moreover, Mr. Schwartz explicitly testified regarding (1) USEC’s announced plans to shut down the Paducah plant and (2) the speculative nature of the future of the U.S.-Russia HEU Agreement after 2013. *See, e.g., Schwartz/Krich Direct A.54, Tr. 1461-1462.*

2. In the same proposed finding, NIRS/PC assert that the DEIS “does not calculate the capacity of various enrichment suppliers and does not estimate the size of the unmet

need to be fulfilled by the proposed NEF.” This is a very curious assertion. In fact, the DEIS and NRC Staff testimony specifically refers to the forecast for “a very close balance of supply and demand after 2010” and the Staff witness explicitly suggested that “there is some risk of a supply shortfall even with the NEF.” Nevin Direct A.12, Tr. 1545. These statements are based on the comprehensive supply/demand analysis submitted in the ER by LES. It is not clear what further support NIRS/PC seek.

3. NIRS/PC Findings 100-101: In these proposed findings NIRS/PC challenge Mr. Schwartz’s conclusion that existing gaseous diffusion plants will not be competitive, because, according to NIRS/PC, Mr. Schwartz does not provide an analysis of “what is and what is not competitive capacity.” However, NIRS/PC do not cite any evidence contradicting Mr. Schwartz’s expert testimony that gaseous diffusion plants will not be competitive and that there will be a natural evolution to lower cost centrifuge plants. See LES Findings 24-25. Moreover, one of the scenarios specifically analyzed in the ER (Scenario D2) involved continued operation of the Paducah gaseous diffusion plant – so this issue has in fact been addressed. Schwartz/Krich Direct A.53, Tr. 1460.

4. NIRS/PC Finding 102: NIRS/PC here challenge Mr. Schwartz’s supply/demand analysis because that analysis (1) does not include the Portsmouth, Ohio gaseous diffusion plant, currently maintained in “cold ready status,” and (2) it assumes that the Georges Besse centrifuge plant would be closed in 2013. However, again, NIRS/PC point to no evidence supporting its proposed finding, *i.e.*, no evidence that either the Portsmouth or Georges Besse facilities will be available. Moreover, Mr. Schwartz testified that his analysis is based on current announced plans (*e.g.*, Tr. 1502), which specifically include Eurodif’s plans to replace the

existing Georges Besse plant with a new centrifuge plans. Schwartz/Krich Direct A.45, Tr. 1453.

5. NIRS/PC Finding 103: In this proposed finding, NIRS/PC offer nothing more than an oblique innuendo that Mr. Schwartz revised his analysis to “enhance demand for enrichment services.” However, on the record Mr. Schwartz explained the changes that he made in September 2003 to the analysis. He testified that the changes in the installed capacity and the tails assay were to update the analysis based on the most recently available data. Tr. 1502, 1508-09. In addition, Mr. Schwartz specifically explained why he “discounted the availability” of certain prospective sources of supply, such as a hypothetical increase in capacity of Russian enrichment plants, the possibility of an increase in highly enriched uranium made available by the United States defense establishment, and possible increases in the capacity of the USEC centrifuge plant. Specifically, he explained that these suggestions were speculative – that is, in his opinion, not sufficiently “real.” Tr. 1505-07. NIRS/PC does not cite to any contrary expert testimony on any of these matters.

6. NIRS/PC Findings 104-107: In these proposed findings NIRS/PC argue that the Board should reject any attempt to measure supply and demand without reference to price. However, the Board has already rejected this argument repeatedly in this proceeding.¹⁰

7. NIRS/PC Findings 108-109, 111: In these proposed findings NIRS/PC challenge the conclusion of the NRC Staff witness Mr. Nevin, because he “did no analysis of

¹⁰ See, e.g., Memorandum and Order (Discovery Rulings) (Oct. 20, 2004) (unpublished), at 17-18; Memorandum and Order (Ruling on Late-Filed Contentions) (Nov. 22, 2004) (unpublished), at 13, 17-18; Memorandum and Order (Ruling on In Limine Motions Regarding Prefiled Direct and Rebuttal Testimony and Providing Administrative Directives) (Feb. 4, 2005) (unpublished), at 4.

costs, prices, or the competitive outcome of the entry of the NEF and the USEC centrifuge plants into the enrichment market.” Again, the Board must reject this argument as it has previously done. A NEPA “need” analysis is not required to be a “business case.”¹¹

2. *Basis B: U.S. versus Global “Need”*

8. NIRS/PC Finding 112: NIRS/PC offer nothing in this proposed finding to contradict the proposed findings of LES addressing Basis B. See LES EC-7 Findings 38-42, at 80-82.

3. *Basis C: Ability to Enter the Market*

9. NIRS/PC Finding 113: In this proposed finding NIRS/PC cite the testimony of Dr. Sheehan for the proposition that the NEF plant is not necessary “since USEC’s Paducah plant is now in operation, and the USEC centrifuge plant is in the works.” However, this testimony utterly fails to come to grips with the comprehensive supply and demand analysis prepared by Mr. Schwartz and presented by LES. Moreover, Dr. Sheehan’s testimony simply favors the USEC plants as a domestic producer over the NEF. He avers to the foreign participation in the NEF, but the foreign participation does not alter the domestic nature of the NEF facility. Moreover, Dr. Sheehan points to no statute or regulation that would restrict the foreign participation in the NEF.

10. NIRS/PC Findings 114-116: These proposed findings addressing the global market participants for uranium enrichment services and the expanding capacity of European producers fail to make any meaningful point related to LES’s ability to enter the

¹¹ Memorandum and Order (Ruling on In Limine Motions Regarding Prefiled Direct and Rebuttal Testimony and Providing Administrative Directives) (Feb. 4, 2005), (unpublished), at 4 (citing *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31, 48-49 (2001)).

market and provide a public benefit. As thoroughly discussed in LES's proposed findings, LES has clearly shown its ability to "enter the market" and provide a "public benefit" based on the substantial contracts and imminent commitments for uranium enrichment services that it has already obtained. *See* LES EC-7 Findings 43-49 at 82-83.

11. NIRS/PC Finding 117: In this proposed finding NIRS/PC cite Dr. Sheehan's view that the LES contracts and commitments include transactions with participants in the LES venture. However, the contracts and commitments are no less binding if a party is an LES participant. NIRS/PC make the cryptic argument that the agreements may be based on an expectation that "USEC will not long survive and that today's prices are the most favorable prices; such conduct would not reflect a public benefit." This argument is speculative at best. Furthermore, it is irrelevant.

12. NIRS/PC Finding 118: In this proposed finding, NIRS/PC assert that LES could meet its commitments under the contracts by supply from a source other than the NEF. However, Mr. Schnoebelen specifically rejected this assertion as a practical matter. *See* LES EC-7 Finding 47 at 82-83.

13. NIRS/PC Finding 119: Like proposed finding 117, this proposed finding regarding Dr. Sheehan's views on what "customers may foresee" is speculative and irrelevant.

14. NIRS/PC Findings 120-121: Mr. Schwartz testified that his analysis included an assessment of a number of alternative scenarios. Schwartz/Krich Direct A. 53, Tr. 1460-1461. He concluded, as referenced in these NIRS/PC proposed findings, that construction of both the NEF and USEC's American Centrifuge Plant ("ACP") would be optimal from the standpoint of national security and reliability of supply. Tr. 1511-1512. NIRS/PC fault that conclusion for lack of "economic analysis" or any assessment of "prices that would prevail in the

market.” However, that argument and these NIRS/PC proposed findings are completely contrary to what is required to support a NEPA “need” determination. LES’s contracts and commitments establish that the NEF can and will be able to enter the market. No further business analysis is required to establish that a viable NEF will serve the policy interests referenced by LES and Mr. Schwartz.

15. NIRS/PC Findings 122-126: NIRS/PC here echo the testimony of Dr. Sheehan related to the purported effect of the NEF on USEC and the economic viability of the ACP. Dr. Sheehan specifically argued that there is a potential for a “foreign monopoly” in the enrichment services business — that USEC, and the USEC centrifuge plant, “would not survive in the market.” However, this is an argument the Board has previously rejected.¹² Moreover, it is an argument that is irrelevant to Basis C. It does not establish that LES cannot enter the market; nor does it establish that the NEF will not serve a public benefit. LES’s testimony clearly establishes the former. With respect to the latter, regardless of the future of USEC and the ACP, the NEF will provide an additional domestic source of uranium enrichment services — and NIRS/PC have offered nothing that proves otherwise.

III. CONCLUSIONS OF LAW

1. NIRS/PC Conclusions of Law 1-7: In these paragraphs, NIRS/PC describe a number of NEPA-related legal principles that purportedly apply to the NRC’s review of the NEF license application. The applicable standards have been fully set forth in the proposed findings of LES and the NRC Staff. LES Background Findings 10-15, at 5-8; Staff Findings 3.5-3.21, at 7-12. That being said, LES makes the following additional points.

¹² See n.9, *supra*.

2. In Paragraph 7 of their conclusions of law, NIRS/PC state that “[m]isleading economic assumptions can defeat the first function of an EIS by impairing the agency’s consideration of the adverse environmental effects of a proposed project.” Insofar as this statement is made in connection with Contention NIRS/PC EC-7, NIRS/PC again ignore the Board’s caveat that it “admitted this contention as an *environmental* contention only, expressly declining to require LES to present a ‘business case’ or provide detailed market analysis.”¹³ Further, as the Commission has recently emphasized, “[d]eterminations of economic benefits and costs that are tangential to environmental consequences are within a wide range of agency discretion.”¹⁴ The proper focus is on “whether the economic assumptions of the FEIS were so distorted as to impair fair consideration of those environmental consequences,” within the context of the agency’s *cost-benefit* analysis.”¹⁵ Thus, despite NEPA’s “rather sweeping list of interests intended to be served, . . . they do not include *purely monetary interests*, such as the competitive effect that a construction project might have on [another] commercial enterprise.”¹⁶

3. Second, in Paragraph 7 of their Conclusions of Law, NIRS/PC state that “[t]he record in this proceeding shall remain open pending the issuance of a Final Environmental Impact Statement [“FEIS”], as required by 42 U.S.C. § 2243(a)(2)” However, that statutory provision, Section 193 of the Atomic Energy Act, states that the FEIS be prepared in accordance

¹³ Memorandum and Order (Ruling on Late-Filed Contentions) (Nov. 22, 2004) (unpublished), at 18

¹⁴ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-22, 60 NRC 125, 145 (citations omitted).

¹⁵ *Id.* (citations omitted).

¹⁶ *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1235-36 (D.C. Cir. 1996) (emphasis added).

with NEPA “before the *hearing on the issuance of a license* for the construction and operation of a uranium enrichment facility is *completed*.” 42 U.S.C. § 2243(a)(2); *see also* 10 C.F.R. § 51.97(c). That provision thus does not preclude the Board from closing the record and issuing an immediately effective partial initial decision on the four environmental contentions.¹⁷ To the extent supervening developments or newly available information so warrant, NIRS/PC can proffer late-filed contentions or move to reopen the record in accordance with the applicable legal standards.¹⁸

4. NIRS/PC Conclusion of Law 8: This paragraph sets forth the NIRS/PC conclusions of law relative to Contention NIRS/PC EC-1. In Paragraph 8.b, NIRS/PC allege a “failure to support estimates of the retardation of uranium contaminants by liners of the TEEB or the USPSRB.” This statement appears to constitute a discrete new claim that is not within the scope of any admitted contention. In Paragraph 8.e, NIRS/PC allege a “failure to calculate the size and speed of a ground water plume in the alluvium, using values appropriate for the gravel beds that are present under the NEF site.” As set forth above, the Board has ruled that the adequacy or reasonableness of the Staff’s “plume” calculations is not litigable in this proceeding.

¹⁷ In fact, the Board already has closed the record on the four environmental contentions, and has stated that “any evidentiary proceeding regarding the [proposed] supplement/amendment to that contention [NIRS/PC EC-4] would be held in conjunction with the hearing on safety matters currently scheduled for fall 2005.” Order (Adopting Transcript Corrections Regarding February 2005 Evidentiary Hearing and Closing Record) (Mar. 22, 2005) (unpublished), at 1-2 & n.2.

¹⁸ *See Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), LBP-02-5, 55 NRC 131, 136-37 (2002) (citing *Wisconsin Elec. Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-86, 5 AEC 376, 377 (1972)) (stating that as long as some part of a licensing case remains before the licensing board [and no exception or appeal on the issue(s) of concern is pending before the Commission], that board retains jurisdiction to reopen the record on any properly presented issue for a proceeding, including matters on which it had already ruled and that had been affirmed by the Commission”).

Therefore, subparagraph 8b. and 8.e should not be considered by the Board. Notwithstanding, LES and the Staff have previously set forth their conclusions of law relative to Contention NIRS/PC EC-1, concluding that this contention should be resolved in their favor based on a preponderance of the credible evidence LES Conclusions of Law 1-2, at 84; Staff Conclusions of Law 5.1-5.5, at 77-78.

5. NIRS/PC Conclusion of Law 9: This paragraph sets forth the NIRS/PC conclusions of law relative to Contention NIRS/PC EC-2. The conclusions proffered by NIRS/PC should not be considered by the Board insofar as they constitute discrete new claims that are not within the scope of the admitted contention (*e.g.*, the asserted need for LES to disclose the “geographic area” within which water usage by the NEF can be expected to have an impact on the Ogallala Aquifer). Notwithstanding, LES and the Staff have previously set forth their conclusions of law relative to Contention NIRS/PC EC-2, concluding that this contention should be resolved in their favor based on a preponderance of the credible evidence LES Conclusions of Law 1, 3, at 84; Staff Conclusions of Law 5.6, at 78.

6. Overview of NIRS/PC Conclusions of Law 10-16 on EC-4: In paragraphs 10 through 16, NIRS/PC set forth proposed conclusions of law relative to Contention NIRS/PC EC-4. In paragraph 10, NIRS/PC asserts that “[t]o refer, as LES has done, to previous EISs for the Claiborne, Portsmouth, and Paducah sites, without supplying the underlying data or an explanation of their analyses, fails to satisfy NEPA requirements as contained in 10 CFR Part 51.” In paragraph 11, NIRS/PC appears to be contending that LES improperly incorporated by reference the extensive discussion of environmental impacts contained in the CEC FEIS, the two site-specific EISs, and the PEIS, and instead a discussion of such matters should have been contained in the ER, itself. In paragraphs 12, 13, and 15, NIRS/PC contend that the NRC staff

has an obligation to undertake an independent evaluation of the information contained in the environmental evaluations which the staff cited in the DEIS. In paragraph 14, NIRS/PC contends that the staff improperly "adopted" the DOE FEISs because the action covered by the DOE FEISs is not the same as the proposed action.

7. NIRS/PC Conclusions of Law 10-15: In the first instance, the proposed conclusions of law proposed by NIRS/PC in paragraphs 10-15 raise entirely new issues which were first advanced at the evidentiary hearing on February 8, 2005, and that have no relation to the issues raised by NIRS/PC in Contention EC-4. Indeed, EC-4, as admitted by the Board, explicitly and solely contends that -- (i) the ER fails to discuss the environmental impacts of construction and lifetime operation of a conversion plant; and (ii) the DEIS improperly relied on the two site-specific environmental evaluations prepared by DOE for deconversion facilities at Paducah, KY and Portsmouth, OH *because the DOE plants are unlike the private conversion plant contemplated by LES (emphasis added)*. With regard to the first issue, Rod Krich, LES's expert witness, testified that section 4.13.3.1 of the Environmental Report references the analysis of environmental impacts for a deconversion facility in the DOE PEIS and site-specific EISs, as well as the CEC FEIS. Krich Direct A.14, Tr. 889. Accordingly, this aspect of EC-4 is now moot. Thus, the sole issue that remains is that the two site-specific EISs prepared by DOE cannot be considered because the DOE plants are unlike the private conversion plant contemplated by LES. NIRS/PC's effort to raise new procedural issues at this point, as they are attempting to do in paragraphs 10-15 -- issues that bear no relation whatsoever to whether the deconversion plants evaluated in the DOE EISs are unlike the deconversion plant contemplated by LES -- should be rejected by this Board as a transparent attempt to expand the scope of the admitted contention without satisfying the applicable criteria for raising late-filed contentions.

8. Beyond this, the crux of NIRS/PC's proposed findings in paragraphs 10-15 is that the staff, in various procedural ways, improperly considered the environmental evaluations previously undertaken by DOE in evaluating the environmental impacts of a deconversion facility. Because the NIRS/PC conclusions essentially raise new procedural issues regarding the manner in which the staff considered the DOE EISs, the appropriate avenue for raising these concerns would have been a motion to reconsider the guidance established by the Commission in its February 6, 2004 Hearing Order, wherein the Commission explicitly authorized the staff to consider DOE's environmental evaluations. Indeed, the Hearing Order, itself, established a procedure for motions to reconsider to be filed with respect to the "Applicable Requirements" contained in Section IV of the Order (and which includes the referenced language on considering environmental evaluations undertaken by DOE). NIRS/PC, having failed to avail itself of this opportunity, now seek to raise issues related to the manner in which the NRC staff considered the DOE evaluations in preparing its DEIS. This effort should be rejected for the foregoing reasons.

9. It is also clear, however, that the issues raised by NIRS/PC in paragraphs 10-15 of their proposed conclusions have no merit. Paragraphs 10 and 11 appear to challenge the authority of LES and the NRC staff to incorporate by reference in the ER and the DEIS, respectively, information contained in other environmental evaluations (such as the CEC FEIS, the PEIS and two site-specific EISs prepared by DOE). As both Mr. Krich and Mr. Palmrose testified, incorporation by reference is a common practice. Tr. 986, 1056. The underlying data and analyses alleged by NIRS/PC to be missing are contained in the referenced EISs -- and they are extensive and comprehensive. Moreover, such an approach, as the staff correctly states in its proposed findings 3.17-21, is entirely consistent with the requirements of 10 C.F.R. 51.45,

which sets forth the requirements for an Environmental Report. To the extent that NIRS/PC is seeking in paragraph 10 a conclusion of law by this Board that it is somehow legally impermissible under 10 C.F.R. 51.45 to incorporate by reference such analyses, no authority has been offered for this view, and it should therefore be rejected.

10. Paragraphs 12,13, and 15 collectively argue that the staff has an obligation to evaluate independently information relied on by the staff, whether contained in analyses performed by others that are incorporated in the staff's DEIS (paragraphs 12 and 13) or submitted by the applicant in its ER (paragraph 15). NIRS/PC contend that the staff failed to satisfy this obligation. As the staff's witness, Dr. Palmrose, testified, the staff undertook a thorough and independent review of the analyses presented by the applicant concerning the environmental impacts a deconversion facility. Staff Proposed Findings 4.99-4.110, at 55-61. Thus, these proposed conclusions of law should be rejected.

11. Paragraph 14 contends that "a federal agency may adopt an EIS prepared by another agency" but only if the action covered by the original EIS is the same as the proposed action. Here, NIRS/PC argue, since the proposed action is not the same, the NRC has an obligation to recirculate the original EIS as a draft. For this reason, NIRS/PC contend that "NRC Staff cannot claim to have adopted the DOE FEISs." Aside from the fact that NIRS/PC failed to raise this issue, either in a motion to reconsider the Commission's February 6, 2004 Hearing Order or in comments on the staff's DEIS, during the public comment period (*see* Paragraph 8, above), the staff correctly notes in its Proposed Findings that it has wide latitude under the Commission's regulations to rely on, and reference, information, studies, and analyses already conducted which show environmental effects of a project under substantially identical conditions. Staff Proposed Finding 3.21, at 12. Moreover, while the Staff testified that it

considered and relied upon the information in the DOE environmental evaluations (as provided for in the Commission's Hearing Order), at no point did the Staff testify that it intended to officially "adopt" the DOE environmental evaluations. Hence the procedural infirmities identified by NIRS/PC relative to the "adoption" process are simply inapplicable here.

12. NIRS/PC Conclusion of Law 16: Paragraph 16 contends that "there has also been a failure to gather, consider, and disclose appropriate information concerning the potential impact of deconversion of depleted UF₆ from the NEF." Ten separate bases are advanced in support of this proposed conclusion of law, which are addressed in turn below.

13. Paragraph (a) alleges that LES and the staff failed to consider the potential impact of deconversion to the UO₂ form. As the Board has made clear, the issue of whether DUF₆ should be deconverted to the UO₂ form is not an admissible issue. The Board has ruled on numerous occasions, most recently when NIRS/PC sought to raise this issue during the evidentiary hearing, that this issue is inadmissible. Tr. 946. Moreover, as pointed out in LES EC-4 Reply Finding 2, above, the UO₂ option was, in fact, extensively analyzed by DOE in its PEIS.

14. Paragraph (b) contends that LES and the staff failed to consider the potential impacts of deconversion using a process that generates anhydrous hydrofluoric acid (AHF). This issue was addressed previously in LES's Proposed Findings and no further reply is necessary here. LES EC-4 Findings 17-19, at 60-61.

15. Paragraph (c) contends that the Claiborne FEIS only contains analyses of routine operations of a facility that generates U₃O₈ and CaF₂. Accident impacts and generation of other products are not considered. This issue was addressed previously by LES in its Proposed Findings and no further reply is necessary here. LES EC-4 Finding 15, at 60.

16. Paragraph (d) contends that neither the ER nor the DEIS refers to substantive analyses contained in the DOE PEIS. Moreover, NIRS/PC contend, no witness appeared at the hearing to explain or defend the analyses contained in the DOE PEIS. To the extent that NIRS/PC is raising a question about whether it is proper for LES and the NRC staff to reference the environmental evaluations performed by DOE in the ER and DEIS, respectively, that issue is addressed in LES EC-4 Reply Finding 3, above, and no further reply is necessary here. To the extent that NIRS/PC is contending that LES's license application only explicitly cites DOE's two site-specific EISs, and does not cite the PEIS, Mr. Krich testified that the two site-specific EISs explicitly incorporate DOE's PEIS and, as a result, it was unnecessary to separately reference the PEIS in the license application. Krich Direct A.17, Tr. 892. Finally, both the staff and LES witnesses testified in detail about the analyses in DOE's PEIS. Krich Direct A.17-27, Tr. 892-98; Palmrose Direct A.10-20, Tr. 1000-06.

17. Paragraph (e) contends that LES and the staff improperly relied on analyses contained in the Portsmouth and Paducah EISs because those documents only contain analyses of a facility that generates U_3O_8 and CaF_2 . To the extent that NIRS/PC is arguing that the two site-specific EISs failed to consider the AHF option, this issue is addressed in LES's Proposed Findings and no further reply is necessary here. LES EC-4 Findings 17-19, at 60-61.

18. Paragraph (f) alleges that NRC staff have failed to take a hard look at the environmental impacts of deconversion of DUF_6 , because they have "simply compared the projected throughput of the Portsmouth and Paducah plants with the throughput of the proposed NEF and have assumed that the impacts of deconversion for the NEF would be bounded." Aside from the fact that NIRS/PC's bald assertion contains no substantive analysis of why such an approach is inappropriate (Mr. Krich testified, for example, that given the relative size of the

facility evaluated by DOE compared to the much smaller NEF facility, it was reasonable to conclude that the DOE analysis bounded the generic environmental impacts of a private sector facility for LES. Tr. 894), the fact is that LES and the staff conducted a much more detailed evaluation of the environmental impacts of a deconversion facility. Krich Direct A.14-30, Tr. 889-99; Palmrose Direct, A.8-21, Tr. 991-1007. Thus, this proposed conclusion of law should be rejected.

19. In Paragraph (g), NIRS/PC contend that “the DOE EISs do not consider the air emissions that would issue from a plant that generates HF in large amounts.” It appears that NIRS/PC is intending in this proposed conclusion of law to raise the issue of “filter efficiency”. This issue is addressed in LES's Proposed Findings and no further reply is necessary here. LES EC-4 Findings 24-25, at 63-64.

20. In paragraph (h), NIRS/PC argue that DOE's EISs fail to consider the environmental impacts of specific transportation routes and all the process chemicals to be transported. This issue is addressed in LES EC-4 Reply Finding 8, above, and no further reply is necessary here.

21. In paragraph (i) and (j), NIRS/PC argue that the DOE EISs fail to consider the implication of the present lack of standards for free release of large quantities of contaminated HF and CaF₂, as well as the impacts of disposal of large quantities of contaminated CaF₂. This issue is addressed in LES's Proposed Findings and no further reply is necessary here. LES EC-4 Findings 26-30, at 64-66.

22. NIRS/PC Conclusion of Law 17: This paragraph sets forth the NIRS/PC conclusions of law relative to Contention NIRS/PC EC-7. Subparagraphs a. through g. should not be considered by the Board insofar as they all raise economic or market-related issues

previously rejected by the Board as inadmissible in this proceeding. Specifically, those subparagraphs raise issues related to “the effect of the addition of the NEF to the existing range of suppliers and forthcoming suppliers, the nature of competition that will occur, and the impacts upon market participants and consumers.”¹⁹ In particular, NIRS/PC focus on the effect of the NEF on USEC, including the viability of its existing and planned enrichment facilities and its continued acquisition of Russian HEU.

23. In Subparagraphs 8.h and 8.i, NIRS/PC reach purported “conclusions” that are plainly erroneous in view of the testimony of LES witness Kirk Schnoebelen. Specifically, the fact that some LES contracts are with participants in the LES venture make the contracts no less binding. Further, as a practical matter, LES would not seek to meet its commitments under the contracts by supply from a source other than the NEF. The related NIRS/PC assertion that the NEF might serve to “equip[] Urenco with virtually unrestricted access to U.S. customers” is both unfounded and irrelevant to the admitted contention. In any event, LES and the Staff have previously set forth their conclusions of law relative to Contention NIRS/PC EC-7, concluding that this contention should be resolved in their favor based on a preponderance of the credible evidence. LES Conclusions of Law 1, 5, at 84; Staff Conclusions of Law 5.12-5.21, at 79-81.

24. In total, as discussed in LES’s initial proposed conclusions of law – based upon the complete evidentiary record – Contentions NIRS/PC EC-1, EC-2, EC-4, and EC-7 should be resolved on the merits in favor of the applicant, LES (as supported by the NRC Staff), and against the intervenors, NIRS/PC. With respect to the issues raised in those four contentions, LES and the NRC Staff have specifically shown by a preponderance of the credible

¹⁹ Memorandum and Order (Ruling on Late-Filed Contentions) (Nov. 22, 2004) (unpublished), at 17-18.

evidence that, with respect to the matters raised in Contentions NIRS/PC EC-1, EC-2, EC-4, and EC-7, the need for, and potential environmental impacts of, the proposed NEF have been adequately considered in accordance with NEPA and 10 C.F.R. Part 51.

Respectfully submitted,



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Dated at Washington, District of Columbia
this 4th day of April 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	Docket No. 70-3103-ML
)	
Louisiana Energy Services, L.P.)	ASLBP No. 04-826-01-ML
)	
(National Enrichment Facility))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the "LOUISIANA ENERGY SERVICES, L.P.'S REPLY FINDINGS OF FACT AND CONCLUSIONS OF LAW REGARDING ENVIRONMENTAL CONTENTIONS" in the captioned proceeding have been served on the following by e-mail service, designated by **, on April 4, 2005 as shown below. Additional service has been made by deposit in the United States mail, first class, this 4th day of April 2005.

Chairman Nils J. Diaz
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Washington, DC 20555-0001

Commissioner Edward McGaffigan, Jr.
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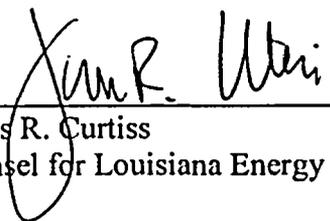
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