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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

February 3, 2005 (11:37am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.
National Enrichment Facility

ASLBP No. 04-826-01-ML

RESPONSE ON BEHALF OF
NUCLEAR INFORMATION AND RESOURCE SERVICE AND PUBLIC CITIZEN TO
LES MOTION IN LIMINE TO EXCLUDE CERTAIN REBUTTAL TESTIMONY OF
NIRS/PC WITNESSES GEORGE RICE, ARJUN MAKHIJANI, AND
MICHAEL SHEEHAN

Preliminary statement

This memorandum is submitted on behalf of Nuclear Information and Resource Service and Public Citizen, Intervenors herein ("NIRS/PC"), in opposition to the Motion in Limine on behalf of Louisiana Energy Services, L.P. ("LES") to Exclude Certain Rebuttal Testimony of NIRS/PC Witnesses George Rice, Arjun Makhijani, and Michael Sheehan, served on February 1, 2005.

Argument

LES's second motion in limine addressed to rebuttal testimony on behalf of NIRS/PC fails to account for the function of rebuttal. Rebuttal testimony is very different from testimony in a party's case in chief. While the scope of direct testimony is bounded by the admitted contentions, rebuttal may be used to address matters introduced by an opposing party. Thus, the purpose of rebuttal testimony is to enable the witnesses "to express their views on the pre-filed testimony of the other parties." *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), Dkt. No. 72-22-ISFSI, ASLBP No. 97-732-02-ISFSI (2004 WL 396367) (Feb. 19,

2004). Specifically, the purpose of rebuttal is to address opposing testimony:

“The purpose of rebuttal evidence is to explain, repel, counteract, or disprove the evidence of the opposing party.” *United States v. Frazier*, 387 F.3d 1244, 1269 (11th Cir. 2004).

Consequently, if a party chooses to open the door with testimony on a given subject, it cannot complain when its opponent shows that the first party’s testimony is in error. Here, LES and Commission Staff have opened up various issues in their direct testimony, and LES finds that the responses by NIRS/PC are not to LES’s liking. But LES cannot demand that the record be left uncorrected.

a. LES’s complaints about the testimony of George Rice.

LES complains that Mr. Rice has testified about the applicant’s lack of information about underlying aquifers beneath the NEF site. There is an aquifer at 600 foot depth, and the Santa Rosa Aquifer is located at a depth of about 1115 feet. (Direct testimony of Harper and Peery, at 14, Jan. 7, 2005). It should be noted that, in their Petition, NIRS/PC asserted that LES’s information was inadequate about the Santa Rosa Aquifer. NIRS/PC asserted, *inter alia*:

“LES also should have determined the ages of water in the Chinle and Santa Rosa. Relatively young water would indicate that water reaches these units along fast flow paths. . . .In addition, LES does not intend to investigate the Santa Rosa Aquifer at the proposed NEF site (ER 3.4-13). LES plans to install only two monitor wells (ER 6.1-7 and figure 6.1-2). Presumably, these wells will be completed in the alluvium. This does not appear to be adequate.” (Pet. 21, 22, April 6, 2004).

As to NIRS/PC contention EC-1, the Board stated:

“Admitted, as supported by bases sufficient to raise genuine issues of material fact adequate to warrant further inquiry.” (Memorandum and Order, at 28, July 19, 2004).

Now LES seeks to strike Mr. Rice’s testimony (Question and Answer 25), which concerns the very basis—that LES has failed to investigate the Santa Rosa Aquifer, and that LES should install monitor wells in that aquifer—that the Board deemed “sufficient to raise genuine issues of material fact.” Clearly, Mr. Rice’s testimony is relevant to an admitted contention, and

LES's motion must be denied.

LES also asks the Board to strike Mr. Rice's statement, pointing out that LES has failed to investigate whether the aquifer found nearby at 600 feet is located beneath the NEF site. (Rice rebuttal testimony A24, Jan. 28, 2005). But Mr. Rice is responding to LES's direct testimony, which claims that the overlying Chinle Formation is highly impermeable (Harper and Peery direct testimony at A24, Jan. 7, 2005), and, *because* of that, there is no need to investigate the 600-foot aquifer:

"A recent investigation performed for the WCS site indicates that there also is a 100-foot thick water bearing layer approximately 600 ft below round surface. The first well-defined "aquifer" beneath the site, however, occurs in the Triassic-aged Santa Rosa Formation, approximately 1,115 feet below the NEF site. LES has not conducted local investigations of these water-bearing units due to their great depths and the thickness and low permeability of the overlying Chinle Formation red beds." (Direct testimony of Harper and Peery, at 14, Jan. 7, 2005).

Thus, LES has raised the issue of the Chinle permeability and the supposed lack of need to investigate the 600 foot aquifer. Having raised the issue, LES can hardly ask the Board to exclude Mr. Rice's responding testimony that the Chinle may well be permeable (Rice rebuttal testimony, A6, at 3, Jan. 28, 2005), nor his conclusion, contrary to Harper and Peery, that the underlying 600 foot zone *should* be investigated (A24), because it may be a flow path. The Board should not be drawn into LES's effort to keep a witness from addressing the premises and the conclusions of LES's experts. Such testimony is fair rebuttal.

Last, LES requests the Board to strike Mr. Rice's testimony that Commission Staff has miscalculated the characteristics of flow in the alluvium. (Rice rebuttal testimony, A23, par. 3; A32 in entirety, Jan. 28, 2005). LES argues that NIRS/PC had not moved to amend its contentions to reflect the Commission's error and so cannot offer direct testimony on this point. (LES Mot. 4). However, even if NIRS/PC may not point out Staff's errors in direct testimony, surely Staff cannot turn a shield into a sword and advance erroneous testimony without

contradiction. Staff's testimony speaks at length about the Staff's scientific analysis of plumes emerging from the NEF's basins. (Toblin direct testimony A13 through A21, Jan. 7, 2005). Commission Staff was not required to trumpet its hydrologic investigations. But Staff has done so and, having opened the door, cannot insulate its work from criticism. Mr. Rice's testimony is fair comment on Commission Staff's prefiled testimony. See, e.g., *Private Fuel Storage* (Independent Spent Fuel Storage Installation), Dkt. No. 72-22-ISFSI, ASLBP No. 97-732-02-ISFSI (June 12, 2000) (Where applicant relies upon specific standards, intervenor may present testimony that applicable standards were omitted). Here, Mr. Rice seeks only to show that appropriate values for hydraulic conductivity and porosity were omitted in the calculations by Mr. Toblin.

b. LES's complaints about the testimony of Dr. Arjun Makhijani

LES asks the Board to exclude Dr. Makhijani's testimony about the alternative processes applicable to deconversion of depleted uranium hexafluoride (DUF₆). The contention in issue, NIRS/PC EC-4, states that the DEIS fails to discuss the environmental impacts of deconversion. Dr. Makhijani's testimony states, as is undisputed, that there is more than one way to deconvert DUF₆. And a NEPA analysis must address appropriate alternatives. 10 CFR 51.45 (b) (3), (c). By these standards, it is difficult to see what is objectionable in Dr. Makhijani's descriptions of various methods of performing deconversion and various deconversion products. One would, of course, select among processes and products with an eye to impacts of deconversion and disposal. The Board ruled on January 21, 2005, that evidence of disposal performance would not be heard under contention EC-4 (Memorandum and Order, at 10-11, Jan. 21, 2005), but evidence of impacts of deconversion is admissible (*id.* 11). Here, the evidence that LES seeks to exclude (Makhijani rebuttal testimony A3, A6, A7, Jan. 28, 2005) all involves the impact of deconversion. The Board ruled on January 21 that evidence about contaminants occurring in

deconversion and the fate and impact of deconversion products is "relevant for consideration in the context of this contention." (Memorandum and Order, at 11, Jan. 21, 2005). The Board allowed Dr. Makhijani to state in his direct testimony that, if LES decides to produce anhydrous hydrofluoric acid, the potential impacts on the environment are likely to be higher" than under the option to neutralize hydrofluoric acid and dispose of calcium fluoride. (See Makhijani revised direct testimony, at 7, Jan. 28, 2005). Dr. Makhijani's rebuttal testimony in issue here concerns similar relevant matters, such as:

1. The steps for deconverting to produce U_3O_8 and UO_2 are different and result in different impacts, such as the level of contamination in the resulting hydrofluoric acid or calcium fluoride. (A3, at 3).
2. DU_3O_8 would be less dense and less uniform in particle size than DUO_2 ; these properties make it less suitable for processing into a protective waste form. The smaller more uniform particle size of DUO_2 that is an advantage in waste form processing also adds to the level of uranium contamination in the resulting byproducts (mainly the hydrofluoric acid and the calcium fluoride that would result from neutralizing the HF) as well as adding to the airborne releases of uranium from the deconversion facility. (A3, at 5)
3. The process for deconverting to UO_2 requires more water, and the smaller particle size results in greater contamination of the resulting wastewater. In the 1997 LLNL engineering analysis, the U_3O_8 and the UO_2 facilities would produce treated wastewater that was contaminated above the EPA safe drinking water standard of 30 $\mu\text{g/liter}$. The water from the U_3O_8 facility had an estimated 42 $\mu\text{g/liter}$ while the water from the UO_2 facility had an estimated 62 $\mu\text{g/liter}$. Both of these facilities would require large amounts of water to dilute

this pollution to the EPA drinking water levels if this water was released from the site. However, the UO₂ facility would pollute approximately 73.2 million additional liters per year compared to the U₃O₈ plant, an increase of almost 80 percent. (A3, at 6).

4. Uncertainties exist as to the performance of deconversion plant that would be larger in scale than that which is available today. (A7, at 12). Changes in the facility may be required versus the options considered in the DOE PEIS. In the event of such process changes, it follows that the impacts presented in the PEIS and the two site-specific Final EISs do not necessarily bound the impacts of the plausible deconversion facilities that need to be considered by LES and the NRC. (A7, at 13).
5. Between the time the DOE PEIS was finalized in 1999 and the Paducah and Portsmouth EISs were finalized in 2004, the nature of the process was changed in one important aspect that increased the consequences of a worst-case chemical accident at the plant, namely the ammonia stored for use had been changed to anhydrous ammonia. (A7, at 13).
6. The accident consequences in the PEIS for an ammonia tank rupture do not bound all of the consequences reported in the Paducah Final EIS. In the PEIS the ammonia tank rupture posed a risk of irreversible health effects to 180 to 420 non-involved workers and 8 to 1,700 members of the general public. The Paducah Final EIS has lower potential consequences for the public (2 to 370 irreversible health effects at the preferred location), but larger consequences for the non-involved workers (600 to 1,600 irreversible health effects). (A7, at 14)

Matters of this nature go directly to the question of impacts of a deconversion facility, which is

the matter in issue under contention EC-4. It would be erroneous to strike Dr. Makhijani's testimony.

c. LES's complaints as to the testimony of Dr. Michael F. Sheehan.

LES seeks to strike the testimony of Dr. Sheehan, asserting that he has gone into forbidden territory involving costs, prices, and competitive activity. (LES Mot. 5). However, Dr. Sheehan's testimony is plainly fair rebuttal to the direct testimony presented by LES and Commission Staff.

Dr. Sheehan points out that these witnesses, Commission witness Rick Nevin and LES witnesses Michael Schwartz and Rod Krich, supposed economic experts, testify that there is a "shortage" of enrichment capacity that would be filled by the NEF, and that, if built, the NEF would participate effectively as a domestic supplier alongside a USEC centrifuge plant. (Sheehan rebuttal testimony at 9-11, Jan. 28, 2005). He states that such testimony contains unstated, and erroneous, assumptions as to the cost structures facing various suppliers, including the existing gaseous diffusion plants and the proposed centrifuge plants. (*id.* A25, at 12).

Despite LES's protests, Dr. Sheehan's testimony is, for the most part, *not* addressed to "inadmissible issues relating to costs, prices, and alleged competitive effects." (LES Mot. 5). Rather, it is addressed directly to the opposing expert testimony, which Dr. Sheehan shows is baseless. Dr. Sheehan's rebuttal testimony does *not* contain the costs or prices that the NEF would encounter in its business life. There is not a line of mathematics in it. Rather, his rebuttal addresses the *testimony* of opposing experts and underscores the foolhardiness of their attempts to assess the "need" for a business venture without considering the markets in which it would exist. As Dr. Sheehan points out, the opposing testimony offers such unwisdom as these:

1. Mr. Schwartz purports to acknowledge that suppliers (e.g., gaseous diffusion plants, centrifuge plants) enter and leave the enrichment market based upon.

their costs and available prices, but he presents a supply-demand analysis that wholly omits the prices or the costs faced by suppliers. (Sheehan rebuttal testimony at A53).

2. LES's witness only counts suppliers he considers "competitive" (Schwartz A41), and then only the "economically competitive and physically usable" portion of their capacity (Schwartz A42), but he refuses to present actual data supporting such judgments. (Sheehan A53, A54).
3. Mr. Schwartz assumes that a "need" can be demonstrated based upon his own projections of plant closures and new plant construction, without considering the costs of the new plants or the prices they will receive (Schwartz A52, A55).
4. Mr. Schwartz constructs an artificial scenario, under which there is a supposed "need" for LES's new enrichment plant, and other competitors like USEC can participate as well, but this scenario ignores economic reality (Schwartz A54).

The Commission Staff likewise offers evidence that analyzes markets without considering the price of enrichment or the costs producers face, e.g.:

5. Mr. Nevin says that there is a possibility of a global supply shortfall, without analyzing prices, and even though European suppliers have been enlarging their capacity regularly. (Nevin A9, A11, A12; Sheehan A20).
6. He sees a need for additional domestic supply—but assumes that the largest domestic supplier, the Paducah gaseous diffusion plant—will be shut down. (Nevin A13, A20).

Such evidence, Dr. Sheehan states, ignores critical facts. (Sheehan A17, A18, A21). He is not trying to sell his interpretation; he is trying to show the faults of the opposition. Such evidence is classic rebuttal. "The purpose of rebuttal evidence is to explain, repel, counteract, or

disprove the evidence of the opposing party.” *United States v. Frazier*, 387 F.3d 1244, 1269 (11th Cir. 2004). Dr. Sheehan’s testimony *explains* why the opposing testimony lacks economic basis, *repels* such unfounded evidence, *counteracts* such misguided teachings, and *disproves* the conclusions of opposing experts. It is admissible rebuttal, and the motion in limine should be denied.

Conclusion

LES seeks to keep highly relevant evidence from the Board. None of its objections has merit. LES’s motion in limine should be denied.

Respectfully submitted,



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February 3, 2005

CERTIFICATE OF SERVICE

Pursuant to 10 CFR § 2.305 the undersigned attorney of record certifies that on February 3, 2005, the foregoing Response on behalf of Nuclear Information and Resource Service and Public Citizen to LES Motion in Limine to Exclude Certain Rebuttal Testimony of NIRS/PC Witnesses George Rice, Arjun Makhijani, and Michael Sheehan was served by electronic mail and by first class mail upon the following:

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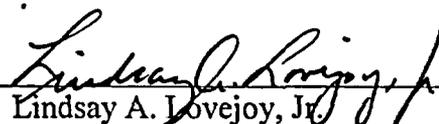
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