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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.

ASLBP No. 04-826-01-ML

RESPONSE ON BEHALF OF INTERVENORS
NUCLEAR INFORMATION AND RESOURCE SERVICE
AND PUBLIC CITIZEN
TO NRC STAFF MOTION FOR SUMMARY DISPOSITION**Preliminary statement**

This response is submitted on behalf of Intervenors Nuclear Information and Resource Service and Public Citizen ("NIRS/PC") in response to the NRC Staff Motion for Summary Disposition, filed November 18, 2005, pursuant to the Order of the Atomic Safety and Licensing Board (The "Board") dated November 9, 2005 and 10 CFR 2.710.

Argument

NIRS/PC and Commission Staff have each filed motions for summary disposition of part of NIRS/PC Contention EC-4 regarding the analysis of the environmental impacts of deep disposal. The motion for summary disposition filed by Commission Staff ("NRC Mot.") takes the position that an environmental impact analysis that has no demonstrable scientific basis will satisfy the National Environmental Policy Act, 42 U.S.C. 4332 ("NEPA"), if the Staff can present affidavits of scientists stating that the results "appear reasonable." This position is not the law.

NEPA requires every federal agency, before taking action with significant environmental impact, to make and disclose an analysis of the impact of the proposed action and reasonable alternatives. The Commission's rules impose the same requirement. (10 CFR 51.45, 51.71).

Here, in the Draft and Final Environmental Impact Statements concerning the National Enrichment Facility ("NEF"), Staff have presented an impact analysis of the disposal of depleted uranium by deep subsurface burial. The following dose results appear in Table 4-19 of the Final Environmental Impact Statement (FEIS).

Table 4-19 Maximum Annual Exposure from Postulated Geologic Disposal Sites

		Granite Site	Granite Site	Sandstone/Basalt Site	Sandstone/Basalt Site
Scenario	Pathway	millisieverts	Millirem	millisieverts	millirem
Well	Drinking Water	3×10^{-4}	3×10^{-2}	2×10^{-7}	2×10^{-5}
	Agriculture	4×10^{-3}	4×10^{-1}	4×10^{-6}	3×10^{-4}
River	Drinking Water	9×10^{-13}	9×10^{-11}	3×10^{-11}	3×10^{-9}
	Fish Ingestion	2×10^{-12}	2×10^{-10}	5×10^{-11}	5×10^{-9}

Staff are unable to explain how these results were derived. But Staff claim that the baselessness of the analysis does not undermine their right to rely upon it. Here, NIRS/PC have presented declarations of expert scientists, stating that the information that Commission Staff have made available in the Claiborne Enrichment Center Final EIS (the "CEC FEIS") and in the NEF FEIS is insufficient to reproduce the results that Staff have published. (Makhijani Declaration, Nov. 18, 2005, par. 4, 5, 13-15, 19; Rice Declaration, Nov. 18, 2005, par. 10, 11). Commission Staff do not dispute that the analysis cannot be reproduced. (Abu-Eid Aff. par. 4). Declarations on behalf of NIRS/PC also state that the dose values are extraordinarily low, both as

absolute values and in comparison with values produced in other recent studies of deep disposal of depleted uranium. (Makhijani Declaration, Nov. 18, 2005, par. 5-12).

Staff assert that the dose results published in Table 4-19 are somehow “reasonable,” and they present affidavits by scientists who state that, in their judgment, the results are “reasonable.” (NRC Mot. 14). Since NIRS/PC have presented declarations by undoubtedly qualified experts, stating that the results in Table 4-19 are scientifically incredible, if the issue were whether the results are “reasonable” in the opinion of a scientific witness, the Board might be faced with a situation where experts disagree, the relevant facts are disputed, and summary disposition cannot be granted.

But, under NEPA, Staff may not present an unsupported analysis and stand on the assertion that it is “reasonable.” Under NEPA, an agency is required to set forth the data and methodologies underlying its analyses (10 CFR 51.45, 51.71) and place its analysis “on the table” (*Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005)), so that the public, other scientists, and the courts may judge its reasonableness. Moreover, here Staff have relied upon earlier analyses in preparing an EIS. In relying on previous analyses, Staff must independently evaluate such analyses—something that clearly has not occurred here, where the previous analyses are unavailable.

Specifically, Commission Staff have presented affidavits of two scientists, on the basis of which Staff claim that Staff used the CEC analyses in preparing the NEF FEIS only after “it undertook a review of the analysis and found it appropriate and reasonable.” (NRC Mot. 14). Staff claim that a Staff scientist recently “reviewed again and confirmed” the reasonableness of the CEC analysis. (id.). Such statements clearly raise the question: How can Staff scientists

review an analysis that is not available to them? However, the affidavits reveal that no such analysis took place:

Dr. Palmrose's affidavit does not state that he—or, indeed, anyone—reviewed the CEC analyses of deep disposal. Rather, he carefully states that an unnamed “member of the proposed NEF EIS team with expertise in hydrology reviewed *the information in the CEC FEIS* regarding the parameters and the models that were used and determined that they were appropriate.”

(Palmrose Aff. par. 3)(*emphasis supplied*). Thus, Dr. Palmrose implicitly confirms that the only information available about the CEC analyses is that which has been published in the CEC FEIS. And he does not deny that the “information in the CEC FEIS” is insufficient to evaluate or reproduce the CEC modeling and results, as stated in detail by declarations presented on behalf of NIRS/PC. (See Makhijani Declaration, Nov. 18, 2005, par. 4, 5, 13-15, 19; Rice Declaration, Nov. 18, 2005, par. 10, 11).

Dr. Palmrose says that the unnamed Staff member “concluded that the results of the analysis appeared reasonable.” (Palmrose Aff. par. 3). But how this unnamed scientist could conclude that results of a complex modeling exercise “appeared reasonable” without access to that analysis and without knowing how the results were produced is wholly unexplained. Neither does Dr. Palmrose explain the scientific criterion used in determining “reasonableness” of unsupported results. The statement that the results “appeared reasonable” is simply a scientifically unsupported assertion that the Board should disregard. Dr. Makhijani's declaration explains in detail that the supposed analysis of deep disposal produces incredibly low dose values and grossly differs from two recent analyses of the same subject—*i.e.*, it is not at all reasonable. (Makhijani Declaration, Nov. 18, 2005, par. 5-15).

The other affidavit, by Dr. Rateb Abu-Eid, likewise states that his review was limited to information published in the CEC EIS. (Abu-Eid Aff. par. 2). He states that the CEC EIS provided "*certain* sensitive flow path parameters" and "*certain* chemical constituents of the deep groundwater" (*emphasis supplied*)—i.e., he agrees that the CEC EIS did *not* provide the values for *all* relevant parameters or chemical constituents. (Makhijani Declaration at 4, 5, 13-15, 19). He states that solubility of uranium was calculated at 10 E-04 mg/L, "assuming that the dominant solid phase was UO₂" but does not state whether that assumption in fact applies throughout the period modeled or what basis underlies the assumption. The Board may infer that he does not know this relevant fact. (See Rice Declaration, Nov. 18, 2005, at 10; Makhijani Declaration, Nov. 18, 2005, at 13-15).

Although Dr. Abu-Eid restates certain general facts about the CEC analysis, which appear in the narrative contained in the CEC EIS (Abu-/Eid Aff. par. 3), he does not dispute that critical elements of that analysis are simply unavailable. The parameters used in PHREEQC analyses to derive solubility values are not known. (Makhijani Declaration, Nov. 18, 2005, par. 13). We do not know whether CO₂ was assumed to be present in the repository. (Rice Declaration, Nov. 18, 2005, par. 5). Critically, we are not told on what basis the CEC analyses either assumed or determined that the dominant solid phase for uranium would be UO₂. (Makhijani Declaration, Nov. 18, 2005, par. 13-15; Rice Declaration, Nov. 18, 2005, par. 10). We do not know whether the CEC analyses assumed the presence of certain complexing minerals that would cause uranium to form insoluble complexes. (Makhijani Declaration, Nov. 18, 2005, par. 15).

Dr. Abu-Eid states generally that the CEC analysis modeled groundwater moving vertically through the disposal site to an aquifer and moving horizontally through the aquifer

(Abu-Eid Aff. par. 2), but he does not disclose critical parameters governing flow and transport of radionuclides through rock bodies. Without knowing the design of the model employed or the values used for parameters describing, *e.g.*, the retardation coefficients and their justification, the repeated statement that the modeling was “reasonable” is simply another unexplained and unsupported conclusion. (Abu-Eid Aff. par. 2; see Rice Declaration, Nov. 18, 2005, par. 11).

Significantly, Dr. Abu-Eid does *not* say that the CEC EIS provided the input and output parameters needed to recreate the analyses. (See Makhijani Declaration, Nov. 18, 2005, par. 4, 5, 13-15, 19). Indeed, he concedes that the EIS gives only a “summary of approaches and methodology” and “estimates of the most sensitive parameters” *without* disclosing “detailed input and output of data and parameters.” (Abu-Eid Aff. par. 4).

Finally, Dr. Abu-Eid admits that the analysis has not been, and cannot be, duplicated, “because of the lack of detailed input data.” (Abu-Eid Aff. par. 4). This is the very point made by Dr. Makhijani—that only input data contain the substance of the assumptions that underlie the analysis. (Makhijani Declaration, Nov. 18, 2005, par. 4, 5, 13-15, 19). Without the input data, an outside scientist can only take note that the dose results appear to be extraordinarily low, but it is not possible to identify the errors in the analysis. Since Staff withholds its full set of assumptions, criticism is blocked.

Applicable law and regulations require not simply that a scientist assert that an impact analysis is “reasonable” but also that the underlying analysis be transparent and understandable. (See NIRS/PC Mot. at 6-8, Nov. 18, 2005). NIRS/PC have, accordingly, presented affidavits stating that the results contained in Table 4-19 cannot be reproduced, nor can their origins be traced, using all the information made available by Commission Staff. Simply put, on this motion, *no one can explain where those numbers came from*. Neither NIRS/PC nor Commission

Staff can state how the numbers that Staff have published were derived. That is undisputed. In such situation, and particularly where the numbers are grossly out of line with reasonable expectations, there can be no question that the EIS is insufficient.

Commission Staff argue that they have, in fact, *explained* the dose calculations contained in the NEF FEIS—they came from the CEC FEIS, times 1.72, counsel for the Staff point out. (NRC Mot. at 17 and note 29). However, even this supposed “explanation” does not make clear why Staff believe that dose should relate linearly to disposal capacity (Makhijani Declaration, Nov. 18, 2005, par. 3, 4). More importantly, this “explanation” does not answer the contention at all. At the hearings on October 27, 2005, the Board made clear that the contention goes to the underlying validity of the dose results published by Commission Staff:

CHAIR BOLLWERK: . . . I mean, my understanding of the concerns that NIRS/PC had were not only with the math that was done but also with the underlying numbers, and also the availability of the background information, as it were.

And maybe that can even be worked out, off the record, at some point. I don't know.

JUDGE ABRAMSON: Yes, and it seems to me you can write down what the source of the error correction was, and then they have a chance to look at it, rather than consuming time here.

Having accepted the concept that there are things that have to be done outside this proceeding.

MS. CLARK: Well, I think on this specific issue we see that the scope of this contention is very narrow. And I believe that on this specific issue —

JUDGE ABRAMSON: On the terms of the math error?

MS. CLARK: In terms of the, yes, of the allegation that the Staff did not do an adequate evaluation, then I think we can get sufficient testimony, that I believe we can resolve this issue.

I know that Mr. Lovejoy has a different view of that.

JUDGE ABRAMSON: So does the Board. Weren't we clear yesterday? Maybe you can repeat, Judge Bollwerk, what we said.

CHAIR BOLLWERK: No, again, if the problem is an exchange of information, and the basis for the underlying — I don't know how we are going to resolve that here, but we can — let me put it this way.

I don't have a problem with spending a couple of minutes here, very briefly, laying whatever foundation you want, and then we can see where we go from there. But I don't think it is going to get resolved today.

MR. LOVEJOY: Our problem, as the Board says, goes beyond the arithmetic.

JUDGE ABRAMSON: And that is what we said, quite clearly, yesterday. That once the arithmetic was – it was quite clear, to us, that there was an alleged error, and there was an alleged omission.

And that fixing the alleged error would have then put NIRS/PC in a position of having the right to submit an amended contention challenging whatever it saw, now, from the correct, in the results from the corrected error.

And our idea, the Board's view, as expressed yesterday was that we were going to collapse that process, so that we don't spend time fixing the error, and then having to have another contention that we are going to let the parties deal with that, generally, which is the allegation that this didn't take a sufficiently hard look in this area. (Tr. 2844-46).

The Board's statements reflect its understanding of the NIRC/PC contention: that the NEPA-required "hard look" has not been taken by Commission Staff, and that Staff's analysis of deep disposal apparently relied on work done in the CEC case—work that was done defectively and erroneously. As a result, NEPA, and rules adopted to effectuate NEPA, have not been complied with.

Staff argue that *some* issues about the CEC deep disposal analyses were litigated in the CEC proceeding. (NRC Mot. at 13). This is irrelevant. There is no showing that the full analysis underlying the CEC FEIS results was ever disclosed. Moreover, NIRS/PC were not litigants in the CEC matter. The Board decision cited by Staff, 45 RC 99, LBP-97-3 (March 7, 1997), was vacated by the Commission after the withdrawal of the CEC application and cannot be claimed to create an estoppel. In its decision at 47 NRC 113, CLI-98-5 (April 30, 1998) the Commission explained that it chose as a policy matter to vacate that and other decisions "and thereby eliminate any future confusion and dispute over their meaning or effect."

Staff also contend that NIRS/PC may not argue that the analysis whose results appear in the NEF EISs is inadequate because it was based upon hypothetical sites. (NRC Mot. 19). However, the fact is undisputed. The more fundamental problem with the analysis is that it is unavailable and cannot be defended or effectively criticized—that is, that it fails to comply with

NEPA. Notably, Staff do not contend that NIRS/PC are blocked from challenging the underlying bases for the results contained in Table 4-19, which was first published in the Draft EIS.

The fundamental fact of this matter is that *not one scientist* testifying for Commission Staff claims to be able to reproduce, explain, or defend the dose results contained in Table 4-19. The public must rely upon agency analyses to understand the impacts of agency decisions. Staff cannot explain to the public why the doses should be so unbelievably small. Scientists among the public cannot evaluate the results. Neither can such scientists effectively participate in the NEPA process by offering informed comments. Experts are reduced to speculating about the origins of the incredible results. A court cannot determine whether a fair impact analysis has been made. The NEPA process is effectively thwarted.

But "to satisfy NEPA, an agency must go beyond mere assertions. At a minimum, it must provide a detailed, thoughtful analysis drawn from adequate data so that a reviewing court can decide on an objective basis whether the agency fairly assessed other courses of action which might realistically be substituted for the one proposed." *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), 7 NRC 774, 779, ALAB-479 (May 25, 1978).

Moreover, this situation involves Staff use of prior analyses. The Commission has recently described the circumstances in which Staff may rely upon prior analyses. (CLI-05-28 (Nov. 21, 2005)). The Commission stated as follows:

In addition, the NRC staff's expert repeatedly affirmed during the hearing that he had assessed the reasonableness of the DOE assumptions, calculations, and conclusions, even though he did not redo its underlying calculations. Actually redoing the DOE's calculations would have been a duplication of resources not required by law. What an agency cannot do is "reflexively rubber stamp a statement prepared by others." Here, the staff's expert found the DOE conversion impacts analyses reasonable "based on an assessment of the material presented and their supporting documents." In short, there

was an independent evaluation of the DOE conclusions. (CLI-05-28, at 21-22) (*footnotes omitted*).

Here, Staff do not have “supporting documents” indicating the parameter values and modeling methods used in generating the results shown in the CEC FEIS. This information is critical to understand the origins of, and the justification for, the extraordinarily low results reported.

Without the supporting records, Staff cannot argue that an expert has “review[ed]” the analysis and “found it appropriate and reasonable,” because the analysis itself is, in fact, unavailable for anyone to review. Without access to the substance of an analysis, approval can only take the form of a “rubber stamp [of] a statement prepared by others.”

All caselaw allowing reliance on previous work requires the Staff to evaluate that previous work, to understand it, and to be able to explain its acceptance of that work. Commission has held that it will not allow Staff to accept previous analyses by “rubber stamp.” (CLI-05-28, at 21-22). Here, Staff have applied a rubber stamp to a study that no one participating in the NEF licensing proceeding can reproduce or defend. Such action violates Commission directives.

Conclusion

There is no need for further litigation of this contention. Commission Staff’s analysis of the impact of deep disposal of depleted uranium is not credible, and it does not comply with the rules requiring the agency to “put on the table” its NEPA analysis. *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005). Staff have not put any analysis on the table. The analysis whose results appear in the CEC EIS is lost to history and cannot be reproduced. Staff have not evaluated, do not understand, and cannot defend the figures contained in the CEC EIS or in the NEF FEIS. This is not NEPA compliance. The Board should direct summary disposition in favor of NIRS/PC.

Respectfully submitted,



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November 28, 2005

CERTIFICATE OF SERVICE

Pursuant to 10 CFR § 2.305 the undersigned attorney of record certifies that on November 28, 2005, the foregoing Response on behalf of Intervenor Nuclear Information and Resource Service and Public Citizen to NRC Staff Motion for Summary Disposition was served by electronic mail and first class mail upon the following:

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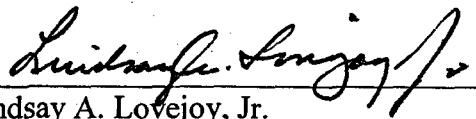
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