



June 2, 2009
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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Director, Office of Nuclear Material Safety
and Safeguards
11555 Rockville Pike
One White Flint North
Rockville, MD 20852

Gentlemen:

**Subject: Response to NRC Request for Additional Information in Support of NRC's
Review of AREVA's Decommissioning Funding Plan (TAC L32821)**

Ref.: 1. Letter, R. L. Rodriguez to R.E. Link, "Request for Additional Information in Support of
Review of Decommissioning Funding Plan for AREVA NP, Inc. Richland Fuel
Fabrication Facility (TAC L32821); April 28, 2009.

Ref.: 2. Letter, R.E. Link to USNRC Document Control Desk, "Updated Decommissioning
Funding Plan (DFP) for AREVA NP Inc.'s (AREVA's) Richland Fuel Fabrication Facility
(License No. SNM-1227; Docket No. 70-1257); January 23, 2009.

Attached please find AREVA's responses to requests for additional information (RAIs) conveyed
via Reference 1, received by AREVA May 4, 2009. The RAIs relate to AREVA's most recent
Decommissioning Funding Plan (DFP) update submitted via Reference 2.
Certain of the responses (Nos. 2, 5 and 7a) call for relatively straightforward changes to the
DFP. AREVA would prefer to allow the NRC to review the attached RAI responses and receive
some indication from the NRC as to their acceptability before proceeding with an official revision
to its DFP. Unless instructed otherwise, AREVA will await the NRC's feedback before
resubmitting the DFP. In the meantime, if you have any additional questions or concerns,
please feel free to contact me at 509-375-8409.

Very truly yours,

Calvin D Manning for

R. E. Link, Manager
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USNRC
June 2, 2009

REL:09:026
Page 2

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**AREVA Response to NRC Request for Additional Information in
Support of NRC's Review of AREVA's Decommissioning Funding Plan
(TAC L32831)**

1. Section 3.0 of the decommissioning cost estimate (DCE) specifies as a key assumption that all low-level radioactive waste (LLRW) generated will be containerized and shipped over a two-year period to the Northwest Compact LLRW Disposal Site. As explained in Section 3.0 and Table 9(b), the site operator is limited to collecting \$5.33M per year from all facility users. The DCE states that it "conservatively assumes application of the entire disposal fee for [a] two-year period to AREVA." Table 9(b) then equates the estimated total disposal volume of 97,080 ft³ to a cost of \$10.66M. No information about the cost per cubic foot charged by the LLRW disposal facility is provided in the DCE. Consistent with 10 CFR 70.25(e), discuss what is the cost per cubic foot of LLRW charged by the disposal facility to support the assumption that the disposal costs will not exceed the estimated amount.

AREVA Response:

As stated in Item No. 6 in Section 3.0, Key Assumptions, of the DFP, the Northwest Compact LLRW Disposal Site operator is not allowed to collect over \$5.33M in revenues from all users on an annual basis, or equivalently, \$10.66M over a consecutive two year period. This is a regulatory limit set by the Washington Utilities and Transportation Commission. The operator sets its annual disposal rates by querying its registered users in advance as to their projected disposal volumes for the coming year. Based on the sum of those projected volumes, the operator sets a disposal rate that will collect the allowed annual revenue. Any revenues collected above the set limit due to higher than anticipated disposal volumes are rebated to the users based on a recalculated disposal rate. Under-collections result in an adjustment of the next year's allowable revenues.

Assuming that AREVA pays the entire \$10.66M over a two year period is conservative in that it assumes no use of the disposal site by any other registered users. Any such use would reduce the AREVA contribution. Assignment of the total revenue contribution to AREVA is also technically independent of a disposal volume/rate, i.e. AREVA would pay no more or no less regardless of whether it disposes of higher or lower volumes than those projected in the DFP. As a point of interest, disposing of 97,080 ft³ of waste at a cost of \$10.66M translates into a disposal rate of \$110/ft³. Demonstrating the impact of higher disposal volumes in the context of a fixed revenue limit, rates during the Trojan Nuclear Plant decommissioning were driven down to the \$50-60/ft³ range. The disposal site could not collect in excess of its revenue cap (without issuing compensatory rebates) regardless of disposal volume.

It should be noted that the DFP does not assume that the generation of the decommissioning waste will be limited to the two year disposal period. As stated in Item 6 of Section 3.0, Key Assumptions, of the DFP, the wastes will be generated, containerized, and then staged for subsequent shipment over a concentrated two year period. AREVA's utilization of a full two years' allowable disposal site revenue allows for a disposal estimate that is both conservative and predictable. The validity of this concept was verified with the rate analyst for the disposal site operator, U.S. Ecology, in the preparation of the updated DFP cost estimate.

2. Tables 9(a) and 9(b) indicate in their titles that they address packaging, shipping, and disposal of LLRW. However, only packaging and disposal cost estimates are included in these tables. Even if the LLRW Disposal Site is located in relatively close proximity to the Richland facility, transport of over 1,000 containers should be associated with significant shipping costs. Consistent with 10 CFR 70.25(e), provide an estimate for the shipping costs of the LLRW. Alternatively, justify why such costs do not need to be included in the DCE.

AREVA Response:

Prior revisions of the Richland DFP addressed shipping costs by incorporating them into the quoted disposal rates. In retrospect this is not achieved when the disposal costs are based on the maximum disposal site revenue limit as opposed to a calculated composite shipping/disposal rate. Based on a quote of \$1,584/transport and assuming 8 containers/transport, shipping of the 1,046 containers will cost \$207,108. Table 9(b) and other impacted downstream tables will be adjusted accordingly.

3. The DCE notes that one of the key changes in the current estimate involves a transition from independent third party labor rates derived from nationally-based R.S. Means publications to "equivalent but more representative and conservative, fully burdened billing rates from State of Washington-based third party contractors." The labor rates are included in Table 7 in the DCE. However, this table does not contain any detailed explanation of how these labor rates were determined, or their source(s). The DCE does not confirm that the "fully burdened" rates include reasonable allocations for wages, benefits, overhead costs, and contractor profit, as recommended by NUREG-1757, nor does it provide any indication of what percentages are allocated for benefits, overhead and profits. Consistent with 10 CFR 70.25 (e), discuss how the State of Washington-based rates were determined or their sources (e.g., were they based on written bids from more than one firm?; do they represent rates from contractors that are presently working for AREVA?; do they represent levels of skills and experience commensurate with the basis for the R.S. Means-based labor rates?; do they include reasonable amounts/percentages for benefits, overhead, and profit?, etc.).

AREVA Response:

As noted, the labor rates used in the December 2005 DFP cost estimate were derived from national R.S. Means publications. These rates are essentially built by taking labor category-specific base rates (hourly rates including fringe benefits) and adding factors for overhead and profit—all as provided by R.S. Means. In contrast, labor costs for the most recent cost estimate were derived directly from written bids/fee schedules of local State of Washington-based contractors currently serving AREVA at the Richland plant. As such these rates come to AREVA fully burdened, including wages, benefits, overheads, and profits.

AREVA considers this transition to be an improvement in the quality of the cost estimate in that the firms have successfully performed at AREVA and are familiar with the extra challenges involved with working in radiologically contaminated zones. The rates are also more conservative relative to formulating a bounding cost estimate, significantly exceeding the R.S. Means rates in many of the labor categories.

4. Table 4 in the DCE describes rates for sandblasting and steam cleaning on a square footage basis for which no supporting labor-related information is provided; that is, no estimate of the labor work days allocated to sandblasting and steam cleaning is provided. As a consequence, the reasonableness of the estimated cost per square foot cannot be

assessed. Consistent with 10 CFR 70.25(3), describe in Table 4 how the cost estimates in dollars per square foot were developed. If they are based on a fixed-price contract at that unit price, the DCE should specify that the contract is based on using third-party labor and indicate whether the duration of the contract does not exceed the three-year time frame between adjustments to the cost estimate. This explanation will help to determine the estimated cost of steam cleaning and sandblasting provided in Table 12.

AREVA Response:

The Table 4 rates for sandblasting and steam cleaning in the current estimate are the rates utilized in the December 2005 DFP escalated for three years of inflation (10%). The December 2005 rates were originally derived from the Decontamination and Decommissioning section of R.S. Means Environmental Remediation Cost Data, 11th Ed. (2005). R.S. Means provided both the combined hourly rate (\$/hr) of the full crew (sandblasting or steam cleaning) as well as the crew's hourly output in ft²/hr. Base hourly labor rates were increased by ≈60% to account for workers' compensation insurance, overheads, and profit. The adjusted labor rate in dollars/hr divided by the hourly output in ft²/hr provided the dollar/ft² rates utilized in the estimate. As previously noted, the December 2005 rates were inflation-adjusted to estimate December 2008 rates. Table 4 then further provides the results of multiplying the dollar/ft² rates times the square footage figures in Table 2 (walls and ceilings for steam cleaning and floors for sandblasting). The total sandblasting and steam cleaning costs in Table 12 are simply the sum of the sub-totals in Table 4.

5. Section 5.1.1 of the DCE explains that costs for removal/disposal of a "reasonable portion" of the material resulting from sandblasting and steam cleaning are included in the cost estimate. However, no table in the DCE appears to contain an explicit accounting of the amount of such material that is expected to be generated. Consistent with 10 CFR 70.25(e), clarify what is the meaning of a "reasonable portion" and provide an estimate of the amount of such material.

AREVA Response:

The last sentence in Item 3 within Section 5.1.1 of the DFP, when it refers to a "reasonable portion of that material," is referring to the "porous, non-durable wall coverings such as gypsum wallboard" referred to in the previous sentence. These materials are not amenable to decontamination via steam cleaning and thus are more reasonably addressed via removal/disposal. Removal of a "reasonable portion" actually corresponds to all such material that is potentially radiologically contaminated. Section 5.1.1 will be revised to clarify this issue and also to correct a misstatement that the material is substantially present in "a single production support facility." In actuality, similar quantities are also present in two production facilities. The wallboard from these two production facilities, like the single production support facility, is however already covered by the cost estimate.

Item 3 in Section 5.1.1 is not discussing residues from sandblasting. Sandblasting residues will be easily accommodated as fill material in the void spaces within the over 1000 boxes of projected building waste (see Table 9a).

6. Section 5.2.3 of the DCE notes that options for disposition of a very small volume of mixed waste have not been identified. However, Table 26 of the DCE specifies a disposal rate per

cubic foot for such wastes. Consistent with 10 CFR 70.25 (e), discuss what are the bases and assumptions for this disposal rate.

AREVA Response:

The \$667/ft³ rate utilized in the disposal cost estimate for these drums corresponds to a per drum treatment/disposal fee of \$5000. This is admittedly an estimate but is considered to be reasonable based on past AREVA experience in dispositioning small lots of drums that required specialized treatment prior to disposal. The site's waste management organization continues to explore options for disposition of these wastes.

7. The following estimated costs are referenced in AREVA's DCE and do not appear to be escalated for inflation:
 - a. the estimated costs per sample for testing and analysis, provided in Table 23 as \$250 per sample, and in Tables 29 and 33 as \$50 per sample,
 - b. Final NRC radiation survey provided in Table 24.

These estimates appear to be the same used by AREVA since 2003, or earlier. Consistent with 10 CFR 70.25 (e), discuss what is AREVA's basis to conclude that these estimated costs are still accurate and do not need to be corrected for inflation. Alternatively, provide the corrected costs and revise the DCE accordingly.

AREVA Response:

- a. These tables will be revised to reflect a consistent and conservative approach, i.e., \$120/sample for a uranium isotopic analysis by a local independent laboratory using alpha spectroscopy. The \$250/sample rate in Table 23 also covers analytes not germane to NRC oversight, namely an expanded list of non-radiological organic and inorganic parameters of interest to AREVA's other regulator for mixed waste - the State of Washington Department of Ecology (Ecology). The costs for these analyses are also covered (identified and financially assured) in AREVA's closure plan currently on file with Ecology for the waste storage areas. Inclusion of these non-NRC costs in the DFP as well as the closure plan provided consistency between the two documents but is not required for the DFP and in retrospect could be seen as an internal inconsistency within the DFP.

The \$50/sample figure used in Tables 29 and 33 had been based on utilization of screening analyses backed by a few full isotopic analyses. These tables will be revised to conservatively assume that all of the samples receive full uranium isotopic analysis via alpha spectroscopy.

- b. The final NRC survey listed in Table 24 applies only to the waste storage areas; these areas manage containerized waste in containers confirmed to meet radiological free release limits on their external surfaces. The areas are subject to ongoing periodic inspections and surveys. Based on these periodic surveillances, historic and current container management practices, and prior radiological screening performed in conjunction with previous Ecology-related closure activities, these storage areas are by-in-large uncontaminated. The \$20,000 figure for the NRC's final survey of these areas, even at the NRC's projected hourly rate of

\$257/hr, translates into nearly two full weeks of NRC staff time. AREVA believes this to be ample for this activity.