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U. S. Nuclear Regulatory Commission  
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Our ref: LTR-RAC-15-66

December 17, 2015

SUBJECT: Westinghouse Response to Request For Additional Information: Triennial Update of the  
Decommissioning Funding Plan (TAC # L33376)

Westinghouse Electric Company LLC (Westinghouse) is pleased to submit the enclosed responses to your  
"Request for Additional Information: Triennial Update of the Decommissioning Funding Plan" dated  
November 17, 2015.

As per our discussions, a formal response to Questions #3 and #10 will be provided no later than March  
31, 2016.

Should you have any questions or require any additional information, please telephone me directly at  
(803) 647-3338.

Sincerely,

A handwritten signature in black ink that reads "Nancy Blair Parr".

Nancy Blair Parr, Manager  
CFFF Licensing  
Westinghouse Electric Company LLC

Enclosure

1. Westinghouse Response to Request For Additional Information (8 pages)

cc:

U. S. Nuclear Regulatory Commission  
11555 Rockville Pike  
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Attn: Mr. Christopher Ryder  
Mail Stop: T-4A60

U. S. Nuclear Regulatory Commission, Region II  
245 Peachtree Center Avenue NE, Suite 1200  
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Attn: Mr. Manuel Crespo

## ENCLOSURE 1

### WESTINGHOUSE RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**RAI #1** - Identify areas in the Decommissioning Funding Plan (DFP) (Ref. 1) dated June 5, 2015, where fewer resources for decontamination are provided compared to the DFP dated June 8, 2012 (Ref. 0). Discuss the technical basis for those reduced staffing levels.

The DFP (Ref. 1) lacks information describing which areas are provided with fewer resources. To ensure adequate funds are available for decommissioning activities, identify which areas of the DFP provide fewer resources for decontamination. Discuss the technical basis for those reduced staffing levels. Account for the cost of an independent contractor to perform all decommissioning activities.

#### WESTINGHOUSE RESPONSE FOR RAI #1

*The 2015 DFP submittal further developed the project costs associated with Work Breakdown Structure (WBS) 1.3, D&D of Facility Areas and Components. In the 2012 DFP submittal, these project costs for D&D of Facility Areas and Components were described at the higher WBS element level (see Ref. 0 pages 4-14 through 4-19); whereas, these D&D costs for the 2015 DFP submittal were described at the lower WBS sub-element level to improve the accuracy of the cost estimate (see Ref. 1 pages 4-19 through 4-43).*

*When evaluating these D&D costs for performing a task at the lower WBS sub-element level, the needs for each specific area were taken into consideration. For instance, decommissioning the ADU Conversion area (WBS 1.3.2) with powders, chemicals and a higher level of contamination requires more resources for a longer period of time than needed for decommissioning the ADU Fuel Rod Manufacturing area (WBS 1.3.5), with mostly encapsulated material, no chemicals and very low levels of contamination.*

*In the 2012 DFP with costing at the higher WBS element level, it was not evident that the analysis/spreadsheet applied the same number of resources (FTE's) to D&D each facility area. For instance, D&D of the ADU Conversion area had the same total number of FTE working and charging time as the D&D of the ADU Fuel Rod Manufacturing area. Given the equipment configuration and smaller size of the Rod area, the 2012 higher amount of FTEs for the Rod area was an over estimation of the workers needed to complete the work.*

*This 2012 analysis detail was recognized and updated in the 2015 DFP submittal when the project costs were further developed and explained at the lower, sub-element level. The man days and associated cost required to complete D&D of each specific Facility Areas is shown in Tables 31 – 86 in the 2015 DFP submittal. This level of enhanced analysis is new to the 2015 DFP.*

*Lastly, the cost of these D&D activities is based on an independent contractor performing the work.*

**RAI #2** - Clarify and justify use of ratios of required person hours to total hours that would be sufficient to complete work activities.

On page a, the DFP (Ref. 1) states that, “The 2015 update applies level-of-effort (LOE) resources to the individual WBS 1.3 cost reporting sub-elements based on the ratio of the man hours that are required to complete the individual work activity relative to the total on-site man hours.” Discuss and justify the use of ratios of required person hours to total hours that would be sufficient to complete the work activities.

WESTINGHOUSE RESPONSE FOR RAI #2

*The D&D activities described in Work Breakdown Structure Element 1.3 all require a similar crew skill set. This crew skill set includes the expertise of individuals in the following labor categories: Work Supervision, D&D Technicians, and Radiation Protection Technicians. As discussed in the response to RAI #1, the man hours of work for each labor category/sub-element is estimated based on the specific needs to the D&D the area. While the D&D of each sub-element will require the same crew skill set, it will not require the same amount of man hours per labor category per task. This method applies the Level of Effort (LOE) needed to complete each task.*

*Tables 31 – 86 in the 2015 DFP submittal include the total estimated man-days per labor category needed to D&D each sub-element. These are determined by first estimating the number of man-hours to complete each task. Converting the man hours required to man-days results in partial FTE's.*

**RAI #4 - State the basis for the unit costs of equipment, materials, and subcontracts in Appendix D of the DFP (Ref. 1).**

WESTINGHOUSE RESPONSE FOR RAI #4

*The unit rates for equipment, material, and subcontractors are based on various sources such as catalogue pricing from R.S. Means and McMaster-Carr; vendor quotes; and D&D Subject Matter Expert's (SME's) experience. All D&D methods and rates used have been proven through use over the course of 30 years of experience in successful D&D operations. These methods continuously improve using actual data collected and analyzed from commercial D&D projects. In addition, the SMEs remain current on D&D methodologies and waste management issues through regular attendance at national conferences, seminars and actual D&D project experience.*

*The cost obtained from these sources were then increased by 10% to account for the typical mark-up that would be applied by an independent D&D contractor.*

**RAI #5** - Discuss and justify the use of reduced per diem rates on page b of the DFP (Ref. 1).

Page b of the DFP states that per diem rates are based on “seventy percent of the CONUS maximum rate” because of “the long term status of this project.” However, the basis for relying on this reduced unit cost is inadequately justified. Revise the DFP to adequately justify relying on this reduced unit cost.

*WESTINGHOUSE RESPONSE FOR RAI #5*

*Using a per diem based on a percentage of the CONUS rate to develop the DFP cost estimate is consistent with that of commercial D&D contractors in the United States. The CONUS rates are based on short term travel and are the maximum reimbursement allowed for government reimbursement. The typical D&D contractor refers to these rates as guidance for establishing the per diem rate only. As this is the normal practice for D&D contractors, including the full rate would unnecessarily inflate the DFP estimate. Additionally, the majority of the workforce will be local labor that will not receive per diem.*

**RAI #6 - Clarify and discuss the labor rates utilized in the DCE.**

Section 2.3 of the DFP (Ref. 1) states that “the DFP cost estimate assumes that all work will be performed by an independent third-party contractor.” The DFP does not specify the source of the labor rates and does not specify the labor rates account for all facets of a rate, such as, but not limited to, the basic wage, benefits, profit, and overhead. The source for labor costs needs to be described in sufficient detail to allow NRC staff to confirm labor rates are reasonably complete so as not to underestimate the cost of decommissioning. Additional discussion is in Appendix A, Section A.3.1.2.1 of Reference 3.

To ensure adequate funding is available to cover the cost of decommissioning, specify in the DCE labor rates used in the DCE include contractor profit and overhead or adjust the DCE accordingly to account for these costs. Provide the source of the rates.

*WESTINGHOUSE RESPONSE FOR RAI #6*

*The supporting details for the DCE labor rates used are provided below. This table will be inserted into section 4.0 of the DFP. The mark up used in the calculations is based on the typical competitive mark up used by D&D contractors. The range for a labor multiplier is 1.75 to 2.00, which is an average of 1.87.*

Labor Category	Direct Rate	PT&I (25%)	OH/Benefits (27%)	G&A (10%)	Fee (8%)	Rate
Sr. Project Manager	\$69.90	\$17.48	\$23.59	\$11.10	\$9.77	\$131.83
Deputy Project Manager	\$49.28	\$12.32	\$16.63	\$7.82	\$6.88	\$92.93
Operations Supervisor	\$44.70	\$11.17	\$15.08	\$7.10	\$6.24	\$84.29
Sr. D&D Technician	\$33.81	\$8.45	\$11.41	\$5.37	\$4.72	\$63.76
D&D Technician	\$28.08	\$7.02	\$9.48	\$4.46	\$3.92	\$52.95
Radiation Protection Manager	\$58.44	\$14.61	\$19.72	\$9.28	\$8.16	\$110.22
FSS Manager	\$67.62	\$16.90	\$22.82	\$10.73	\$9.45	\$127.52
ES&H Manager	\$60.74	\$15.18	\$20.50	\$9.64	\$8.48	\$114.55
Sr. RP Technician	\$37.24	\$9.31	\$12.57	\$5.91	\$5.20	\$70.24
Project Controls Specialist	\$49.28	\$12.32	\$16.63	\$7.82	\$6.88	\$92.93
Waste Coordinator	\$55.01	\$13.75	\$18.56	\$8.73	\$7.68	\$103.74
Planner/ Engineer	\$49.28	\$12.32	\$16.63	\$7.82	\$6.88	\$92.93
Administrative Assistant	\$26.93	\$6.73	\$9.09	\$4.27	\$3.76	\$50.79
Project Administrator/ Reg. Affairs	\$49.28	\$12.32	\$16.63	\$7.82	\$6.88	\$92.93
Jr. D&D Technician	\$21.20	\$5.30	\$7.15	\$3.37	\$2.96	\$39.98
FSS Technician	\$31.51	\$7.88	\$10.64	\$5.00	\$4.40	\$59.44
Equipment Operator	\$42.05	\$10.51	\$14.19	\$6.68	\$5.87	\$79.30

**RAI #7 - Discuss and justify the calculation and implementation of the inflation rate from 2012 to 2015.**

The DFP (Ref. 1) indicates that an inflation rate of 2.2 percent “was applied to pertinent components of the cost estimate.” Westinghouse relied on Bureau of Labor Statistics (BLS) Consumer Price Index to calculate the inflation rate of 2.2 percent. But by information published by the BLS Consumer Price Index, the inflation rate from 2012 to 2015 is 3.5 percent if based on the May 2012 to May 2015 time period (May is the month before the DFP was submitted in 2012 and 2015). The inflation rate is 2.9 percent if based on the annual average Consumer Price Index for the period 2012 – 2014.

The source of various unit costs are not provided and the DFP does not specify the year in which individual cost items are based, precluding the NRC staff from confirming the appropriateness of the inflation factor to components of the cost estimate.

Discuss and justify the methodology used to calculate an inflation rate of 2.2 percent. To ensure that the DCE is being properly inflated, incorporate an inflation rate of at least 2.9 percent. Identify the year in which each cost element is based.

**WESTINGHOUSE RESPONSE FOR RAI #7**

*The 2.2 percent inflation rate was the cumulative rate of inflation calculated by the US Inflation Calculator ([www.usinflationcalculator.com](http://www.usinflationcalculator.com)) for the time period of June 2012 to February 2015 when the Westinghouse cost estimate update started in March of 2015. However in October 2015, the website updated its calculation based on the new government CPI data. The new data for the time period of June 2012 to October 2015 would show an inflation rate of 3.5 percent. The DFP has been updated to use the 2.9 percent inflation rate based on the annual average Consumer Price Index for the period 2012 – 2014.*

**RAI #8 - Revise the DCE to include an adequate contingency factor.**

Section 2.3 states that, "A contingency factor has not been included in this DFP cost estimate. Instead, the 25 percent contingency factor is added and submitted to the NRC via the Westinghouse financial assurance mechanism submittal." Section 7 states that, "The cost estimate included with this DFP does not include a contingency factor in accordance with the direction given by Westinghouse management personnel."

Due to the uncertainty of contamination levels and the costs associated with decommissioning, a detailed cost estimate for decommissioning, in an amount reflecting an adequate contingency factor is required. The NRC staff views an adequate contingency factor as 25 percent applied to the sum of all estimated decommissioning costs (see Appendix A, Section A.3.1.2.3 for Reference 3). The DFP does not include a contingency factor in the DCE and explicitly states in Section 2.3 (page 2-4) and Section 7 (page 7-1) that a contingency factor is not included. To ensure compliance with the regulatory requirement, modify the DCE to incorporate a contingency factor of at least 25 percent. See Appendix A, Section A.3.1.2.3, of Reference 3, for additional discussion.

**WESTINGHOUSE RESPONSE FOR RAI #8**

*A 25% contingency factor has been added to the DFP cost estimate, and Section 2.3 and Section 7 were revised accordingly. The 25% contingency factor is included in the Westinghouse financial assurance documentation.*

**RAI #9 - Confirm that the DFP (Ref. 1) has been updated based on the Decommissioning Planning Rule (DPR).**

WESTINGHOUSE RESPONSE FOR RAI #9

*NRC performed an inspection of CFFF implementation of the Decommissioning Planning Rule in June 2013 per Temporary Instruction 2600/017, "Review of the Implementation of the Decommissioning Planning Rule (DPR)." The objectives of this Temporary Instruction (TI) were to determine whether the licensee or certificate holder had implemented the requirements of the DPR that was issued on June 17, 2011 (76 FR 35512) and became effective on December 17, 2012.*

*NRC Inspection Report Number 70-1151/2013-003, dated July 24, 2013 documents that NRC inspection confirmed the CFFF had implemented the requirements of the DPR.*

*"Based on the results of the environmental inspection documented in Section A.1 the inspectors verified that the licensee maintained adequate radiological control programs to minimize the introduction of radiological contamination into the site environment, and had a program to ensure that releases of radioactivity to the environment are promptly identified and characterized. In addition, the inspectors verified that the licensee recorded radiological survey data to identify the location and concentrations or quantities of contamination that may require remediation at the time of license termination, and was reporting updated financial assurance as required by the DPR."*

*In addition to the inspection report, it is CFFF practice to not create any environment legacy issues. Per CFFF procedures, if spills or releases of radioactive materials occur, they would be promptly cleaned up so as to not contribute to any structure or subsurface residual radioactivity.*