

Attachment 1 to Holtec Letter 5025048
Responses to NRC Staff Evaluation of RAI Responses

Response to RAI ER-CB-5, November 2018 (ML18345A137)

RAI ER-CB-5 requested additional details for the calculations and assumptions for the \$4.5 million operation and maintenance costs in ER Table 9.2.5 (Holtec, 2017: hereinafter called ER Rev 0). Table 9.2.5 from ER Rev 0 cited the 2017 Data Call as the source for the information in Table 9.2.5. However, the 2017 Data Call document was not provided in the initial license application.

The RAI response updated ER Chapter 9 (Holtec, 2018a: hereinafter called ER Rev 3) and Holtec Report HI-2177593 (Holtec, 2018b). The Data Call 2017 document was included within ER Rev 3 as Appendix G. The revisions in ER Rev 3 changed the annual operation and maintenance cost estimates from \$4.5 million to \$27.3 million but did not clarify how the \$27.3 million estimate was generated.

The inputs to the updated \$27.3 million estimate in ER Rev. 3 do not appear to be consistent with the estimates provided the January 2019 response to RAI CB-2 (Holtec, 2019a). ER Rev. 3 stated that the initial \$4.5 million estimate was based on existing decommissioned power plant costs and that the revised \$27.3 million estimate was prorated to more adequately represent expected costs for the proposed CISF. The updated Table 9.2.5 also includes a \$19,404,800 line item identified as plant operation costs (minus labor) but does not explain the basis for this line item cost. The revised estimate accounted for an increase in labor costs (see ER Table 9.2.5) but did not otherwise reflect any change in the number of employees or the hourly rates cited in the 2017 Data Call, which had estimated a \$4.5 million cost.

The following information should be submitted to complete the RAI response:

- Confirm the cost estimate for the operation and maintenance of the proposed CISF.
- Provide a detailed explanation of how this cost estimate was generated, including a description of what comprises the line item for operation costs minus labor. In doing so, explain whether the January 2019 response to RAI ER-CB-2 remains accurate.
- As appropriate, provide conforming changes to the ER and other application documentation (e.g., Holtec Financial Assurance Plan Report).

Holtec Response:

The total cost estimate of \$27.3 million for the operation and maintenance of the proposed CISF as shown in Table 9.2.5 of ER Rev. 3 (and later revisions) is accurate. A typo in the third line for Chemists has been corrected from \$249,000 to \$249,600 (correction is captured in ER Rev. 7). This typo did not cause errors in other line items of this table and had no effect on the total cost estimate for maintenance and operations (approximately \$27.3 million).

The full cost estimate presented in ER Table 9.2.5 is a scaled value based off the \$4.5 million estimated costs provided by an existing, decommissioned nuclear power plant. The value of \$4.5 million, as described in the 2017 Data Call, specifies that \$1.3 million of the \$4.5 million is directly attributed to the cost of labor. It is assumed that the total annual operating costs for non-labor costs will scale linearly with the increase in labor costs. Therefore, to determine the total annual operating costs, the total annual labor costs are calculated first based on the total operational workforce quantity and salary estimates (also provided in the 2017 Data Call). All workers are assumed to work 2080 hours annually. The total annual labor cost is therefore determined to be \$7,883,200. The annual labor cost is then multiplied by 4.5 and divided by 1.3 to get the estimated total annual operating costs. The non-labor

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portion of the annual operating costs can then be determined by subtracting sum of the labor costs from the total annual costs.

The January 2019 response to RAI ER-CB-2 is not accurate as it utilized the wrong total operation and maintenance cost estimate value. However, the table provided in the response to RAI ER-CB-2 showing the mix of anticipated operating costs does show accurate percentage values for each line item. Table 9.2.5 has been updated and expanded in ER Rev. 7 to show the additional non-labor line items provided in the previous response to RAI ER-CB-2.

To capture the changes as described above, only ER Chapter 9 required revision. No changes were needed in any other Holtec Reports as a result of these updates, including the Holtec Financial Assurance Plan Report. The Holtec Financial Assurance Plan Report already properly reflects an annual operations and maintenance cost of \$27.3 million.

Response to RAI ER-CB-3, March 2019 (ML19081A075)

RAI ER-CB-3 requested clarification of the net benefits or net losses attributed to the proposed action and inconsistencies in the ER (Holtec, 2017) regarding whether the proposed action would result in a net benefit or net loss. Introductory text in ER Section 9.2.3 stated that the proposed action would result in net benefits rather than net losses under both Phase 1 and full buildout (i.e., Phase 1-20). However, subsequent text in that same section stated that the discounted costs for the full buildout of Scenario 2 resulted in a net loss.

In the response to RAI ER-CB-3, the ER Section 9.2.3 (Rev 5) (Holtec, 2019b) was revised to consistently state that the discounted costs for the full buildout of Scenario 2 result in a net loss. However, the same revision of the ER contains additional inconsistencies concerning the assessment of net benefits and losses or cost (“net values”) including:

- The first paragraph of ER Section 9.2.3 stated non-discounted costs for full buildout of Scenario 2 results in a net benefit (no estimate provided) whereas paragraph three of the same section stated that non-discounted costs for full buildout of Scenario 2 results in a net cost (loss) of \$300 million.
- The estimated net values presented in the ER Section 9.2.3 text were inconsistent with the net values associated with the information presented in ER Tables 9.2.1 to 9.2.6 (hereafter called the ER Section 9.2 tables). The NRC staff calculated net values shown in the table below. It compares the net values from the ER Section 9.2.3 text and the ER Section 9.2 tables. The discrepancies between the text and tables are in bold. The text in ER Section 9.2.3 contained all of the net values but only some of the proposed action costs and the No-Action alternative costs (“input data”). The ER Section 9.2 tables contained all of the input data but none of the net values.

Comparison of Net Values from ER Section 9.2.3 Text and ER Tables 9.2.1 to 9.2.6.				
Phase	Scenario	Discounting	Net Values (in millions)	
			ER Section 9.2.3 Text	ER Section 9.2 Tables
Phase 1	1 and 2*	None	1,625	1,625
		3 Percent	2,086	786

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		7 Percent	2,352.7	252.7
Full Buildout	1	None	na†	4,500
		3 Percent	na	2,800
		7 Percent	Na	1,200
Full Buildout	2	None	-300	-300
		3 Percent	600	-1,700
		7 Percent	1,300	-2,300
Full Buildout	3	None	14,200	14,200
		3 Percent	15,100	6,700
		7 Percent	15,800	2,500
*For Phase 1, scenario 1 and 2 cost estimates were the same and no scenario 3 costs were estimated. † na – not available since ER Section 9.2.3 text did not provide these values				

The following information should be submitted to complete the RAI response.

- Identify the correct net values for each of the options presented listed in the table above.
- Either: i) revise the ER so the description of net values in the ER Section 9.2.3 text is consistent with the information in the ER Section 9.2 tables or ii) explain how the description of net values in the ER Section 9.2.3 and the information in the ER Section 9.2 tables are consistent.

Holtec Response:

The values in Tables 9.2.1, 9.2.2, 9.2.3, 9.2.4, 9.2.5, and 9.2.6 that were submitted in the March 2019 Environmental Report are correct. However, the text in Section 9.2.3 was not updated correctly to match the updated information in the tables. This has been corrected in ER Rev. 7.

Response to RAI ER-PA-5, March 2019 (ML19081A075)

RAI ER-PA-5 requested: i) the project schedule be revised to clearly identify by each PY which project stages and phase are active over the license term (e.g., in PY 3 Phase 2 construction and Phase 1 operations are active) and ii) for each project stage, detail the type of activities that would be occurring and types of equipment that may be in use. The ER Table 1.3 (Holtec, 2017) only addressed the first half of the project lifespan and did not clearly identify the overlap in terms of phases. The RAI requested information on the potential overlap in order to assess potential bounding impacts for environmental resource areas, in particular regarding air quality and emission levels.

The ER Table 1.3 (Holtec, 2019b) was revised in response to RAI ER-PA-5. For the construction stage, revised ER Table 1.3 identified in which PYs the construction stage was active and also specified the phase (e.g., PY 4 – construction Phase 3 active). For the operations stage, revised ER Table 1.3 identified in which PYs the operation stage was active; however, it did not include the phase information. For the decommissioning stage, a note for final years but it did not specify either the PYs or phases. The written response to RAI ER-PA-5 (Holtec, 2019c) did not address the second part of the RAI which requested for each stage, detail what activities are occurring and what equipment is in use.

If the operations and decommissioning stages overlap, then the peak emission levels could exceed the emission thresholds identified in the ER and would seem to be inconsistent with the March 2019 response to RAI ER-AQ-3, which states that operations would cease and all SNF would be removed from

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the site prior to the start of demolition activities (i.e., that operations and decommissioning would not overlap). In addition, the response for RAI ER-PA-5 stated that operations and decommissioning stages overlap is not consistent with the March 2019 RAI response to RAI ER-AQ-3 which states that all SNF would be removed from the site and operations activities ceased prior to the start of demolition activities (i.e., operations and decommissioning do not overlap).

The following information should be submitted to complete the RAI response.

- Clarify the extent to which, if at all, operational stages at the site would overlap with decommissioning stage activities.
- Explain the implications, if any, for the environmental impact analysis (e.g., for peak emission levels), and update the ER and responses to RAIs PA-5 and AQ-3 as appropriate.
- Update the ER and responses to RAIs PA-5 accordingly.
- Verify whether the March 2019 response to RAI AQ-3 is still accurate. If not, then provide any necessary revisions to RAI AQ-3 when responding to this RAI

Holtec Response:

Table 1.3 has been further revised to specify the operational phases in addition to construction phases and operational capacity. The note below Table 1.3 was revised to clarify that only decommissioning planning activities will overlap with the final years of the operation only stage. However, all demolition activities for the decommissioning phase will not begin until all SNF is removed from the site and operations activities ceased.

This updated response has no bearing on the previous responses for PA-5 or AQ-3 as we maintain the fact the demolition activities will not overlap with any operational or construction phases (note that the updated Response to RAI ER-AQ-4 below does result in changes to Tables 4.6.1 through 4.6.4).

Additionally, Chapter 4.6 already discusses in detail the type of activities that could be occurring and types of equipment that may be in use for each stage.

Response to RAI ER-AQ 4, March 2019 (ML19081A075)

RAI ER-AQ-4 requested detailed information (e.g., calculations, inputs, sources activities, and parameters) used to generate each of the emission inventories in ER Tables 4.6.1 through 4.6.4 (Holtec, 2017).

Holtec's March 2019 response to RAI ER-AQ-4 (Holtec, 2019c) included separate spreadsheet files (Holtec, 2019d) which provided additional information for the generation of the emission inventories in ER Tables 4.6.1 to 4.6.4. The separate spreadsheet files did not provide the equations or a clear description of how the particulate matter PM₁₀ emission rates were generated for the earth moving activities.

The information in the spreadsheet files was also inconsistent with other information in the application. The ER Section 4.6.1.1 (Holtec, 2017) stated that the earth moving activities were calculated accounting for the full 133.5 hectares [330 acres] of land that would be disturbed over the construction period. However, that statement is inconsistent with this information in the separate spreadsheet files which specify a value of 80.9 hectares [200 acres]. The March 2019 response to RAI ER-AQ-8 indicated that no mitigation measures were incorporated into the emission inventories in ER Tables 9.2.1 to 9.2.4. This

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statement was not consistent with this information in the separate spreadsheet files which incorporate a five percent reduction in emissions for not conducting activities when the wind speed exceeds 40.2 kph [25 mph].

The following information should be submitted to complete the RAI response:

- Revise the ER and the separate spreadsheet files to ensure consistency concerning the amount of land associated with the earth moving activity emissions.
- Provide the equation and input parameters used to estimate the particulate matter PM₁₀ emissions from the earth moving activities.
- If any changes are made concerning the inputs or resulting fugitive dust emission levels for the earth moving activities, then revise both the separate spreadsheet files and ER and supplement the impact analysis if necessary.
- Clarify whether mitigation measures were incorporated into the emission inventories in ER Tables 9.2.1 to 9.2.4 and revise the ER and the separate spreadsheet files if needed.

Holtec Response:

The response to previously submitted RAI ER-AQ-7 provided separate spreadsheet files detailing emissions estimates. Those files have been revised to present updated emission estimates for earth moving activities accounting for the appropriate 330 acres as discussed below, as well as to provide additional discussion and equations for the determination of PM₁₀ emissions. See attached file tab 'Ch. 4.6 Const Earth Moving'.

Phase 1 of construction will take approximately 2 years and will disturb approximately 120 acres. This results in 60 acres per year of land disturbed. 60 acres per year will be the maximum annual emissions basis as Phases 2-20 will disturb the remaining approximately 210 acres with each phase taking one year (i.e. subsequent 19 years), resulting in annual disturbance rate of approximately 11 acres per year. This accounts for the full 330 acre area of the project.

The calculations were additionally revised such that no mitigation factors are used in the estimation.

ER Tables 4.6.1 through 4.6.4 have been revised to reflect the updated calculation files. No other changes were made to the chapter 4 text. Despite the increase in PM₁₀ and PM_{2.5} there is no change in the impact as emissions from all criteria pollutants from construction activities will remain below 10 pounds per hour (PPH) and 10 tons per year (TPY).