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January 29, 2020

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ATTN: Document Control Desk
Director, Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Docket No. 40-3392
License No. SUB-526

RE: Honeywell Metropolis Works Responses to NRC Request for Additional Information on the Triennial Update to Decommissioning Funding Plan

Pursuant to License Condition 25 and 10 CFR 40.36(d), Honeywell International Inc. (Honeywell) provided an updated Decommissioning Funding Plan (DFP) to the NRC on January 4, 2019. The NRC sent a request for additional information (RAI) on the 1/4/2019 version of the subject document on November 4, 2019. Enclosure 1 provides the Honeywell responses to the NRCs RAIs.

Should you have any questions on the enclosed information, please contact Sean Patterson, Regulatory Affairs Manager, at 618-524-6341

Sincerely,

Jeff Fulks,
Plant Manager

Enclosures:
1. Response to the NRC RAIs on the DFP

Cc: U.S. NRC
Attention: David Tiktinsky
11555 Rockville Pike
Rockville, MD 20852

NM5520

REQUEST FOR ADDITIONAL INFORMATION REGARDING HONEYWELL METROPOLIS WORKS TRIENNIAL UPDATE TO THE DECOMMISSIONING FUNDING PLAN (CAC/DOCKET NUMBER/EPID 000224/04003392/L-2019-DDP-0000)

(DFP-1) Justify key assumptions in the DCE related to the disposition of inventory (10 CFR 40.36(d)(1)(i)(A); 10 CFR 40.36(d)(1)(ii); 10 CFR 40.36(d)(2)(v); Draft Interim Staff Guidance on Decommissioning Funding Plans for Materials Licensees)

10 CFR 40.36(d)(2)(v) requires that the DFP consider how changes in authorized possession limits may impact the DCE. 10 CFR 40.36(d)(1)(i)(A) requires that the DFP provide a detailed cost estimate that reflects "the cost of...perform[ing] all decommissioning activities." 10 CFR 40.36(d)(1)(ii) requires that the DFP identify and justify the key assumptions contained in the DCE.

Draft Interim Staff Guidance on Decommissioning Funding Plans for Materials Licensees (June 2018) (ADAMS Accession No. ML18163A087) describes ways in which the disposition of multiple types of inventory can be covered in the DCE, including licensee-owned, customer-owned, and inventory in-process. For customer-owned inventory, the guidance states that a reasonable alternative to including the costs for packaging, loading, and transporting the material to another facility that can accept the material under its license "may be an existing contract under which the customer is responsible for packing, loading and shipping the material to an end destination that can accept the material under the end destination's license."

The 2019 DCE does not include decommissioning costs for the disposition of inventory present at the facility at the time of decommissioning. The July 16, 2019 responses to the NRC's Request for Supplemental Information provides a detailed justification for excluding these costs, including the following statement:

At the MTW, Source Material (SM) inventory consistent of feed stock material, in process material, recovery material and finished goods material. These types of materials are not waste, contamination, or residual radioactivity but rather inventory that will be or has been used during normal operations. Their movement, packing and off-site shipment are principal licensed activities. ***Current SM material is owned by MTW customers, is of significant value, and will be utilized as part of normal licensed processes or transferred for use at another facility prior to commencing decommissioning.*** *The MTW UF_6 processes can be emptied of SM inventory in a timely manner and produce a form of material that can be removed from the site under arrangements that fall under principal licensed activities. Based on the above, MTW assumes that all the inventory has been dispositioned and removed from the plant site prior to the start of decommissioning. Therefore, the costs of removing inventory from the site was not considered in any of the cost estimates.* ***MTW current contracts require that the customer is responsible for packing, loading, and shipping the material to their NRC controlled site*** *(emphasis added).*

The supplemental information makes clear that inventory at the MTW is customer owned and that current contracts require that the customer is responsible for the costs of disposition. Are there any existing historic customer contracts in place which do not contain this current language?

MTW Response to DFP-1

Uranium inventory disposition is a licensed operation that must be performed prior to declaring per 10 CFR 40.42 (d) that a licensee has permanently ceased principal activities. If specific contracts do not specify that the customer is responsible for the disposition, Honeywell will be required to disposition the material under licensed operations prior to decommissioning.

Planned DCE Revision

None

(DFP-2) Justify or clarify nonlabor decommissioning costs (10 CFR 40.36(d)(1)(i)(A); NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1.2.2)

10 CFR 40.36(d)(1)(i)(A) requires that the DFP include a detailed cost estimate that reflects "the cost of...perform[ing] all decommissioning activities." NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1.2.2 lists nonlabor costs that are likely to arise during decommissioning, including laboratory costs (including transport of samples to a third-party laboratory, testing and analysis, etc.) and miscellaneous expenses (e.g., license fees, insurance, taxes, security). The 2019 DCE does not make clear how laboratory costs are included in the DCE. The 2019 DCE includes "Regulatory Fees" and "NRC fees," but does not make clear how other miscellaneous costs (e.g., insurance, taxes, or security) are included in the DCE. To ensure that the DCE covers the costs of performing all decommissioning activities explain how these nonlabor costs are included in the DCE, including either identifying how they are incorporated in the 2019 DCE or justifying why they are not required decommissioning activities.

MTW Response to DFP-2

Laboratory costs for Final Status Survey (FSS) are included in the FSS task as subcontract cost for sample analysis of Appendix A2 – Cost Summary. The total estimated cost for the sample analysis is $364,770. The quantity of samples to be analyzed is based on the following: 1) Footprint of each building/area for FSS following decontamination and dismantlement; 2) Incorporates a reasonable expected MARSSIM survey classification based on available characterization data; and 3) Includes enough samples per survey unit to meet statistical requirements of MARSSIM Data Quality Objectives.

Other nonlabor costs (e.g. security, insurance, taxes) were captured in a generic line item listing for "Regulatory Fees" at $18,000,000 and have not historically been detailed in previous cost

estimates. Honeywell will provide Revision 1 of the Decommissioning Cost Estimate to update these costs and other items. Nonlabor costs are calculated using current facility annual costs for the 10.25-year duration of the decommissioning process as *Misc. Non-Labor costs* line items. These updates are reflected in the cost summary table that also includes NRC Regulatory Fees for quarterly inspections and costs for NRC review of the Decommissioning Plan, for a total nonlabor cost of $31,875,540. These, and other changes increases the total cost of the decommissioning cost estimate (the total estimate includes the 25% contingency) from $192,463,202 to $206,175,636 in Revision 1 of the 2018 Honeywell Decommissioning Cost Estimate update. The following is a breakdown of the nonlabor costs:

ITEM	Duration	Rate/unit	Cost	Comments:
Security	10.25 Yr.	$ 1,000,000.00	$ 10,250,000.00	Personnel Annual Cost
Taxes	10.25 Yr.	$ 60,000.00	$ 615,000.00	Property Tax Annual Cost
Insurance	10.25 Yr.	$ 1,950,000.00	$ 19,987,500.00	Annual radiological and environmental liability insurance
NRC Decommissioning Plan Review	400 Hrs.	$ 278.00	$ 111,200.00	Est 400 hrs. at $278/hr
NRC Regulatory Fees	10.25 Yr.	$ 88,960.00	$ 911,840.00	2 inspectors for 5 days/qtr. for 10.25 years
Subtotal:	--	--	$ 31,875,540.00	

Planned DCE Revision

Table 4-1 in the 1/4/2019 version and Appendix A-2 of the DCE will be revised to indicate the additional cost as described in the response to this RAI.

(DFP-3) Provide more detail for the facility description in the DCE (10 CFR 40.36(d)(1); NUREG-1757, Vol. 3, Rev. 1, Appendix A, Sections A.3.1.1, A.3.4, and A.3.5). Additionally, provide more detail about subsurface conditions 10 CFR 40.36(c)(5); 10 CFR 20.1501; NUREG-1757, Vol. 3, Rev. 1, Section 3.1.

Facility Description

10 CFR 40.36(d)(1)(i) states that the DFP must include a "detailed cost estimate for decommissioning," and 10 CFR 40.36(d)(1)(ii) states that the DFP must provide "[i]dentification of and justification for using the key assumptions contained in the DCE." NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1.1 states that "the facility description provides the basic context of the estimate. It should include both general and specific information, including the following: . . . description of facility buildings, rooms, and grounds, including the numbers and dimensions of areas that require decontamination; number and dimensions of facility components (e.g., fume hoods, glove boxes, laboratory benches, ductwork) that require

decontamination." NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.4 and Section A.3.5 provide an acceptable format for providing the facility description summary and the number and dimensions of facility components.

The 2019 DCE generally describes the facility buildings that will require decontamination but does not provide specifics about the numbers and dimensions of areas that will be decontaminated, nor the number and dimensions of facility components that will require decontamination. Therefore, to allow the NRC to determine the adequacy of the DCE, provide the description of facility buildings, rooms, and grounds, including the numbers and dimensions of areas that require decontamination, and the number and dimensions of facility components (e.g., fume hoods, glove boxes, laboratory benches, ductwork) that require decontamination.

Subsurface Conditions

In accordance with 10 CFR 20.1406(c), licensees must minimize the introduction of significant residual radioactivity into the site, including the subsurface. In accordance with 10 CFR 20.1501, licensees must perform radiological surveys to identify and evaluate the extent of residual radioactivity at their sites, including the subsurface. These surveys are to be reasonable under the circumstances to evaluate concentrations or quantities of residual radioactivity (as defined in 10 CFR 20.1003) that would require remediation at the time of decommissioning. Further, 10 CFR 40.36 ©(5) states, "If, in surveys made under 10 CFR 20.1501(a), residual radioactivity in the facility and environment, including the subsurface, is detected at levels that would, if left uncorrected, prevent the site from meeting the 10 CFR 20.1402 criteria for unrestricted use, the licensee must submit a decommissioning funding plan within one year of when the survey is completed." Finally, survey records describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning, and such records must be retained in accordance with of 10 CFR 40.36(f).

The 2019 DCE neither addresses nor eliminates the potential for radiological groundwater contamination in any areas of the Honeywell site. Honeywell should either (a) indicate that funds are not needed because significant residual radioactivity is not present in site groundwater; or (b) provide an estimate of funds needed to address radioactive contamination in groundwater. Substantiating information (e.g., for areas downgradient of the restricted area, the drainage swale to Outfall 002, etc.) should be provided in an explanation for including or not including groundwater remediation funds.

MTW Response to DFP-3

Facility Description

Contamination levels of structures and components were reported in the 2006 Site Reclamation Cost Estimate Report and remain consistent with current known contamination levels.

Contaminated facility components are assumed to be disposed as Low-Level Radioactive Waste (LLRW) to a licensed disposal facility. The surface area of impacted building structures and land areas are summarized in the tables below.

The surface areas form the basis for the 2018 update to the site decommissioning cost estimate. The summary provides the preliminary MARSSIM classification and the impacted surface area. Attachment 1 provides an expanded table with details on the surface areas by building/area determined to be impacted. The basis for developing these surface areas is based on the assumption that buildings associated with uranium processing operations were considered to have impacted floors, walls (lower and upper), and ceilings. Buildings not associated with uranium processing operations were MARSSIM class 2.

Impacted Building Surface Area

MARSSIM Class	Floor and Lower Walls Surface Area (m^2)	Ceiling and Upper Walls Surface (m^2)
2	32,013	49,731
3	256	344
Total:	**32,269**	**50,075**

Impacted Land Surface Area

MARSSIM Class	Land Surface Area (m^2)
1	313,246
2	14,916
3	12,756
Total:	**340,918**

As part of the 2018 DCE update, an estimate to decommission each structure was developed. Each estimate was prepared in the form of a work package. There was a total of 46 work packages that were developed as part of the development of the DCE.

Attachment 2 provides an example of the information developed and used for calculation of the decommissioning cost by detailing one specific area. Included in the attachment is a *Work Package Summary Page* that identified the area by name and WBS number; a short description of the tasks, the expected technical approach, and pertinent assumptions. *Land Area and Final Status Survey Time* calculates the surface area and the anticipated time for the radiation scan and survey based on the preliminary MARSSIM class. Details for major components, including removal time and waste details are provided on the *Removal Time and Waste Estimate* page while the anticipated schedule by craft, including equipment, to complete the tasks are shown on the *Work Schedule* page. Labor, Equipment, and a summary of the waste disposal costs are included on the *Cost Estimate* page.

Subsurface Conditions

In 2009, Honeywell conducted a comprehensive radiological characterization of the MTW to assess the levels of radiological activity that Honeywell will need to address during decommissioning of the MTW site. The purpose of the site characterization was to define constituents of concern and assess the migration of these constituents within surface and subsurface soil.

The Honeywell Metropolis Works Radiological Characterization Report for Site Soils (January 2010) includes detailed information on radioactivity in site soil and groundwater. A significant change from previous cost estimates is the inclusion of the landfill and kickback area, i.e. Work Package # 3.3.30 in the previous table, which was not included in the characterization report.

The results of the site characterization indicated that there is contamination above background levels at various locations both inside and outside the Honeywell restricted area. Based upon review of site process history and predictions made within the Historical Site Assessment, these results were expected. RCRA sampling results indicate that there is low probability that these impacted areas contain RCRA metals which would yield a mixed waste.

The characterization report also included an assessment of Honeywell's groundwater monitoring program and available groundwater data which was completed to determine the potential that uranium had migrated to site groundwater. Conclusions from this review indicate that there is a low probability that site groundwater has been impacted from uranium.

According to the October 2019 *Environmental Assessment for the Proposed Renewal of Source Material License SUB-526* report (ML19273A012):

> Existing nonradiological groundwater contamination is limited to the MTW site and is being managed under the conditions of Honeywell's RCRA permit. Radiological data available for the groundwater monitoring programs administered under the conditions of Honeywell's RCRA permit indicate that the rare exceedances of MCLs for radiological parameters have been isolated. Resampling and reanalysis after each exceedance have demonstrated that the parameters in question are below the MCLs. Radiological soil and sediment contamination on the MTW site is temporary because at the time of decommissioning, Honeywell will meet the NRC's regulatory standards for unrestricted, that correspond to a calculated dose to the public that is less than 0.25 mSv/yr (25 mrem/yr) from applicable pathways.

Planned DCE Revision – None

(DFP-4) Apply the contingency factor to the "Illinois Rad Waste Fee" (10 CFR 40.36 (d)(1)(i)(D); NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1.2.3)

10 CFR 40.36(d)(1)(i)(D) requires that the DCE must be in an amount reflecting "an adequate contingency factor." NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1.2.3 states that the

contingency factor should be applied to all estimated decommissioning costs. The guidance also explains that an adequate contingency factor is required "because of the uncertainty in contamination levels, waste disposal costs, and other costs associated with decommissioning" and states that "proposals to apply the contingency only to selected components of the cost estimate, or to apply a contingency lower than 25 percent, should be approved only in circumstances when a case-specific review has determined that there is an extremely low likelihood of unforeseen increases in the decommissioning costs (e.g., if the decommissioning costs are highly predictable and are established by binding contracts)."

The DCE includes a contingency of 25 percent, which is applied to all decommissioning costs other than the Illinois Rad Waste Fee (See Table 4-1, "Decommissioning Cost Summary"). The Illinois Rad Waste Fee is a cost associated with the decommissioning of the MTW facility and, therefore, in accordance with the guidance, the contingency factor should be applied to the Illinois Rad Waste Fee, or justification needs to be provided on why the Illinois Rad Waste Fee has an extremely low likelihood of unforeseen increases in the decommissioning costs. To ensure that adequate funding is available to cover decommissioning, the DCE needs to be updated to apply the contingency factor to all estimated decommissioning costs, including the Illinois Rad Waste Fee or provide specific justification on why it is unnecessary.

MTW Response to DFP-4

The cost estimate will be updated to apply the 25% contingency following inclusion of the Illinois Rad Waste Fees. This change will be reflected in Table 4-1 of Revision 1 of the Decommissioning Cost Estimate. This, and other changes as described in our response to DFP-2, increases the total cost of the decommissioning cost estimate (including the 25% contingency) from $192,463,202 to $206,175,636.

Planned DCE Revision

Table 4-1 in the 1/4/2019 version of the DCE will be revised to indicate the additional cost.

(DFP-5) Update the basis for cost estimates in the DFP (10 CFR 40.36(d)(1)(ii); NUREG-1757, Vol. 3, Rev. 1, Appendix A, Sections A.3.1 and A.3.15)

The requirements in 10 CFR 40.36(d)(1)(ii) state that a DFP must contain "identification of and justification for using the key assumptions contained in the DCE." In addition, NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.1 states that "a decommissioning estimate should contain a substantial level of detail, consistent with the guidance presented in this section, to allow the NRC to fully evaluate the adequacy of the estimate" and that "the labor estimates, material costs, and other factors of the cost estimate should have a clear and reasonable basis." The DCE does not provide an adequate basis for labor costs or equipment costs. Therefore, provide additional information on these cost elements, as described further below.

Labor Costs

The 2019 DCE does not specify the source for labor costs. However, the July 16, 2019 responses to the NRC's Request for Supplemental Information states that:

Estimates for labor costs were developed using two different methods, one for craft labor categories and one for non-craft labor categories. Labor costs for craft labor categories (equipment operators, foreman, laborers, etc.) were sources from R S Means (2018). It was assumed that the craft labor would be local to the site and no per diem was included in the labor cost. Labor costs for non-craft labor (engineers, geologists, project management, etc.) were sources from industry knowledge of prevailing rates for personnel experienced in facility decommissioning. It was assumed that experienced non-craft labor is not readily locally, so per diem rates were applied to non-craft labor categories based on 2018 GSA per diem rates for the continental United States.

Although the supplemental information identifies the source of the labor costs, additional information is needed to allow the NRC to fully evaluate the adequacy of the labor cost estimates. Table 4-3, "Decommissioning Estimate Selected Unit Cost Factors," provides only a sub-set of unit costs relied on in calculating labor costs and does not provide adequate information to allow one to recreate the labor cost calculations presented in Appendix A-2 (Cost Summary) using the hours estimates provided in Appendix A-4 (Labor Summary). Specifically, Appendix A-4 identifies hours estimates for a broader and different group of labor categories than the group of labor categories for which unit costs are provided in Table 4.3. The following table compares the labor categories included in Table 4-3 (Decommissioning Estimate Selected Unit Cost Factors) to the labor categories in Appendix A-4 (Labor Summary).

Labor Categories in Table 4.3	Labor Categories in Appendix A-4
Engineer	Engineer
Administrative Assistant	Administrative Assistant
Equipment Operator	Equipment Operator
Laborer	Laborer
Radiation Protection Supervisor	D&D Supervisor
Laborer Foreman	Project Manager
Instrument Technician	HP Technician
Radiation Protection Technician	Radiation Safety Officer/Certified Health Physicist
	Assistant Project Manager
	Environmental Health & Safety Manager
	QA/Waste Manager
	Cost and Schedule Controls

Because a unit cost is not provided for all labor categories included in Appendix A-4, NRC cannot determine the reasonableness of the total labor costs presented in Appendix A-2. Therefore, provide additional information, including why categories are not needed, if that is the

assumption, that would allow the NRC to recreate the labor costs, including a comprehensive list of the labor rates relied on in the DCE with labor categories consistent with the labor categories utilized in Appendix A-4.

Furthermore, additional information is needed explaining how travel and living expenses were incorporated into the DCE. As stated above, supplemental information provided by the licensee states that "Labor costs for non-craft labor (engineers, geologists, project management, etc.) were sources from industry knowledge of prevailing rates for personnel experienced in facility decommissioning. It was assumed that experienced non-craft labor is not readily locally, so per diem rates were applied to non-craft labor categories based on 2018 GSA per diem rates for the continental United States." However, Appendix A-2 indicates that Travel and Living Expenses were only included in the labor costs for activities related to "Project Management." Because Appendix A-4 shows that non-craft labor is relied on to perform decommissioning activities other than "Project Management," provide additional information explaining how travel and living expenses are incorporated in the DCE, including for decommissioning activities performed by non-craft labor other than "Project Management."

Equipment Costs

The 2019 DCE does not provide an adequate basis for the equipment costs. Appendix A-2 (Cost Summary) provides an itemized list of costs, including costs for equipment. The costs for equipment do not identify unit costs or the quantity of equipment needed, but rather roll up the cost estimate to total cost for equipment by decommissioning task. Additionally, a source of unit costs for equipment is not provided in the DCE. The July 16, 2019 responses to the NRC's Request for Supplemental Information states that:

Equipment costs for the 2018 DCE were determined by the site review team by first establishing the likely approach to demolition to be utilized. Based on the selected approach to demolition; the required equipment, manpower and durations necessary for removal of the equipment and building demolition or scabbling of concrete pads and moving waste directly to the gondola cars was developed. No additional handling is expected and transportation to the railcars is part of the demolition task. The sources of the costs for equipment were 2018 RS Means. Regionally developed equipment costs are selected in lieu of updating costs originally developed in 2006 DCE.

To ensure that adequate funding is available to cover the cost of equipment at the time of decommissioning, additional information is needed about the break-down of equipment costs (i.e., quantities and unit costs) consistent with the equipment/supply cost tables included in NUREG-1757, Vol. 3, Rev. 1, Appendix A, Section A.3.15 and previous DCE submissions provided by the licensee (See Appendix 9 to Honeywell's 2015 DCE).

MTW Response to DFP-5

Labor Costs

Labor categories that were presented in Table 4-3 represent a condensed category list for brevity. The actual list of categories used to calculate total labor cost is significantly more detailed and applicable to a decontamination and dismantlement project. In addition, the rates presented in Table 4-3 were prevailing wage rates while the rates used for calculation are location adjusted rates. Table 4-3 in the text will be updated to clarify the actual location adjusted rates used and to match the categories in Table A-4. These labor categories and rates are included in the table below.

Labor Category	Unit Cost /hr
Project Manager	$137.90
Assistant Project Manager	$83.89
RSO/CHP	$137.90
EH&S Manager	$106.87
QA/Waste Manager	$114.91
Engineer	$106.87
Cost & Schedule Controls	$106.87
Administrative Assistant	$37.92
D&D Supervisor	$63.75
HP Technician	$54.01
Laborer (Semi-Skilled)	$60.70
Equip. Operators	$81.05

Travel and Living Costs

Travel and living costs are grouped together and included as a project management cost. The calculated cost per 7-day week is $643.52 per person. The cost estimate assumes 50 percent of the on-site personnel are not local and will receive travel and living allowance throughout the project duration. Total travel and living cost for the project management line item as shown in Appendix A-2 is $6,138,494.

Equipment Cost

As part of the 2018 DCE update, work packages that formed the basis of the estimate included equipment. The cost for each major piece of equipment was obtained from RS Means (2018). The expected required equipment is determined by area. A work package example is provided in Attachment 2. The *Work Schedule* page shows the duration that each piece of major equipment will be used, and the cost is shown on the *Cost Estimate Page.* Attachment 3 provides a table of the major equipment and unit cost.

Planned DCE Revision

Labor Costs

Table 4-3 will be updated to clarify the actual location adjusted rates used to match the categories shown in A-4 – Labor Summary.

Travel and Living Costs

Section 1.5 Assumptions and Bases will be revised to clarify the travel and living costs.

Equipment Costs

The equipment cost table in Attachment 3 from this RAI response will be included as a new Appendix A-5.

Attachment 1 – Impacted Area Summary

Work Package #	Task Identification	MARSSIM Class (Structures)	Floor and Lower Walls (m^2)	Ceiling and Upper Walls (m^2)	MARSSIM Class (Land)	Land Area (m^2)
3.1.1	BD - 1 Administrative Building	2	4,559	5,162	n/a	n/a
3.1.10	BD - 10 FPF Area Building	2	771	2,066	1	1,296
3.1.101	BD - 101 Storage Tent	n/a	n/a	n/a	1	4,459
3.1.1052	P-1052 Diesel Compressor Trailer South of the Power House	2	118	168	n/a	n/a
3.1.11	BD - 11 CAF2 Recovery Area Building	2	2,776	6,039	n/a	n/a
3.1.16	BD - 16 Pond Muds Calciner Area & Uranium Ponds Equipment Area	n/a	n/a	n/a	1	1,022
3.1.18	BD - 18 Ore Storage Building	n/a	n/a	n/a	1	2,044
3.1.2	BD - 2 Laboratory Equipment Building	2	295	375	n/a	n/a
3.1.22	BD - 22 Scale House Area BD - 36	n/a	n/a	n/a	1	386
3.1.24	Ore Storage Pads	n/a	n/a	n/a	1	24,759
3.1.25	BD - 25 CFX Building	2	953	1,847	n/a	n/a
3.1.27	BD - 27 Switch House Building	2	197	392	n/a	n/a
3.1.29	BD - 29 Feed Materials Building	n/a	n/a	n/a	1	1,159
3.1.3	BD - 3 GF2 South Cell Room and Production Offices	2	4,522	5,827	n/a	n/a
3.1.31	Drum Storage Pads	n/a	n/a	n/a	1	2,258
3.1.32	BD - 32 Supply Storage Building for BD - 69	3	256	344	n/a	n/a
3.1.33	BD - 33 Fines Storage Building	n/a	n/a	n/a	1	3,205
3.1.34	BD - 34 Drum Crusher Building	n/a	n/a	n/a	1	1,073
3.1.35	BD - 35 GF2 Cell Cond and Maintenance	2	5,947	9,203	n/a	n/a
3.1.4	BD - 4 GF2 C Cell Room, ABC South Pad and A&B Rectifier	2	3,332	5,435	n/a	n/a
3.1.42	BD - 42 STF Area Building	2	296	554	2	3,122
3.1.43	BD - 43 and BD - 76 Contractor Security Entrance	2	614	948	n/a	n/a
3.1.44	BD - 44 KPA Bioassay Lab Urine Analysis Trailer	2	216	367	n/a	n/a
3.1.48	BD - 48 UF6 Cylinder Storage	n/a	n/a	n/a	1	18,395
3.1.5	BD - 5 GF2 North Cell Room, D&E Rectifiers and D&E South Pad	2	2,376	3,633	n/a	n/a
3.1.50	BD - 50 Storage Building	2	328	455	n/a	n/a
3.1.52	BD - 52 Control Room Building for HF Railcar Off Loading	2	352	491	n/a	n/a
3.1.6	BD - 6 Shop and Stores Building	2	1,352	1,876	n/a	n/a
3.1.601	Portable Steam Supply Trailer East of the Power House	2	110	144	n/a	n/a
3.1.7	BD - 7 Power House Building	2	1,773	2,533	n/a	n/a
3.1.8	BD - 8 Paint Building	2	190	296	n/a	n/a
3.1.83	BD - 83 Liquid Nitrogen Building	2	256	386	n/a	n/a
3.1.9	BD - 9 Dealkalization Building	2	78	80	n/a	n/a
3.1.92	BD - 92 Waste Sorting Building	2	382	1,028	n/a	n/a
3.1.94	Waste Storage Area	n/a	n/a	n/a	1	5,414

Work Package #	Task Identification	MARSSIM Class (Structures)	Floor and Lower Walls (m^2)	Ceiling and Upper Walls (m^2)	MARSSIM Class (Land)	Land Area (m^2)
3.1. Sub-11	BD - Sub - 11 CIPS Sub Station	2	219	427	n/a	n/a
3.1. Tank Yard	Tank Yard	n/a	n/a	n/a	1	855
3.3.1	Parking Lot	n/a	n/a	n/a	3	12,756
3.3.24	FMB Post Demolition Concrete Pads Survey	n/a	n/a	n/a	1	6,090
3.3.25	Roadways and Ground Areas (P-25)	n/a	n/a	n/a	2	7,937
3.3.26	Security Exclusion Area (P-26)	n/a	n/a	n/a	1	26,332
3.3.27	2009 Subsurface Soils	n/a	n/a	n/a	1	101,558
3.3.28	Outfall 002	n/a	n/a	n/a	1	13,229
3.3.30	Landfill and Kickback Area (bottom)	n/a	n/a	n/a	1	44,488
3.3.30	Landfill and Kickback Area (slopes)	n/a	n/a	n/a	2	3,857
3.3.32	Land Area P-21 and P-24	n/a	n/a	n/a	1	55,225

Attachment 3 – List of Major Equipment and Unit Rates

Item	Description	Unit (weekly) Rate	Source
Hydraulic Excavator	1 Hydraulic excavator	$4,289	2018 RSMeans (pg. 715) 1 Hyd. Excavator, 3.5 C.Y.
Hydraulic Front-End Loader	1 Rubber tired front-end loader	$2,489	2018 RSMeans (pg. 730) 1 F.E. loader, W.M., 2.5 C.Y.
Hydraulic Shear	1 shear and or grapple attachment	$1,043	2018 RSMeans (pg. 715) grapples
Hydraulic Hammer	1 hyd. hammer (hoe ram) attachment	$728	2018 RSMeans (pg. 715) hydraulic hammer, for boom mounting 4000 ft-lb
Concrete Saw	1 concrete saw	$140	2018 RSMeans (pg. 715) self-propelled gas
Man Lift	1 manlift, 20-ft, electric	$103	2018 RSMeans (pg. 715) self-propelled electric
Flatbed Truck	3-ton flatbed, single axle truck	$200	Internal
Dump Truck	3-axle, 16-ton, 12 CY payload, 400 hp dump truck	$700	2018 RSMeans (pg. 717)
Elliptical Tank	1,000-gallon elliptical tank	$7,333	Internal
Trash Pump	2-inch diameter heavy duty trash pump	$8,000	Internal
Floor Scabbler	Concrete scabbler Air 5 Head	$415	Internal
Crane	1 Crane truck mounted hydraulic 150-ton capacity	$3,978	2018 RSMeans (pg. 723) self-propelled
Cutting Torch	1 Cutting Torch	$821	2018 RSMeans (pg. 720) including tips and gas
Floor scabbler	Floor scabbling unit	$757	Internal