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Subject: Westinghouse Electric Company LLC (WEC) Hematite Decommissioning Project Exemption Request

References: 1) Westinghouse Reported Event 30 Day Follow Up Report, HEM-08-108, December 18, 2008

2) Westinghouse Electric Company LLC Initial Response to the U.S. Nuclear Regulatory Commission Confirmatory Action Letter, CAL 3-08-005, HEM-08-111, December 18, 2008

Westinghouse Electric Company LLC (WEC), the licensee for the Hematite facility, hereby requests pursuant to 10 CFR 70.17(a) an exemption from the requirements for a criticality monitoring system of 10 CFR 70.24(a) for certain process buildings at the facility, to allow further characterization and their ultimate demolition in accordance with approvals already granted. The grant of such an exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. Enclosure 1 to this request includes the "Technical Basis for the 10 CFR 70.24 Exemption Request for Process Buildings at the Hematite Site" (Technical Basis Document).

The Hematite Decommissioning Project ("HDP") includes the demolition of six interconnected process buildings as shown in Figure 1 of the Technical Bases Document. In accordance with previous U.S. Nuclear Regulatory Commission ("NRC") approvals, decontamination and decommissioning of equipment and surfaces within the subject process buildings commenced in 2001 following cessation of fuel manufacturing operations at the Hematite facility. This project resulted in the removal of the majority of process piping and equipment from the buildings. The existing conditions in the subject buildings are generally typified by empty process buildings with a relatively small quantity of remaining equipment, ventilation ducts, and piping. The majority of the remaining equipment was cleaned, inspected and tagged and accessible surfaces were sprayed with fixatives to lock down any potential surface contamination. Accessible building surfaces were similarly sprayed with fixatives.

Section 70.24(d) of Title 10, Code of Federal Regulations, is applicable to the Hematite facility in that the SNM-33 license authorizes the licensee to possess special nuclear material in a quantity exceeding 700g of contained ^{235}U.[1] Given such applicability, the Hematite facility is

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1 Massive moderators reflectors made of graphite, heavy water or beryllium are not present at the Hematite facility.

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required to "maintain in each area in which such licensed special nuclear material (*i.e.*, 700 grams or more of contained ^{235}U) is handled, used or stored a criticality monitoring system meeting the specifications of Section 70.24(a)(1) or (a)(2)."

It has been WEC's understanding, given the wording of the regulation, guidance endorsed by the NRC Staff and applicable precedents, that it need not install such a criticality monitoring system in that no separate area in the subject process buildings contained more than 700g of ^{235}U, as discussed in detail in the attached Technical Bases Document.[2] After discussions with the NRC Staff, as a conservative action, Westinghouse has determined that it will request an exemption from said regulation to allow expeditious characterization and later demolition of the process buildings and to resolve the remaining differences between it and the NRC Staff as to the necessity for such criticality monitoring system.[3] As discussed in detail in the Technical Bases Document, the absence of a criticality monitoring system for the process buildings will not endanger life or property or the common defense and security and is unnecessary as a criticality accident is not credible.

The current estimated inventory of ^{235}U within all five individual facility areas within the process buildings is below the subcritical ^{235}U mass limit provided in National Consensus Standard ANSI/ANS-8.1. Even if this subcritical mass limit was exceeded, two or more additional parameters would have to simultaneously exceed conditions that are independently judged to be incredible to attain, in order for a critical configuration to be possible.

Given that a criticality accident is not credible, it would be contrary to the guidance in National Consensus Standard ANSI/ANS-8.3 to deploy an active criticality monitoring system since it would only increase risk to personnel due to the non-trivial potential for false alarms. (*See* National Consensus Standard Section 4.1.1.: Installation of an alarm system implies a nontrivial risk of criticality; *see also* Section 4.1.3: "The purpose of an alarm system is to reduce risk to personnel. Evaluation of the overall risk should recognize that hazards may result from false alarms and subsequent sudden interruption of operations and relocation of personnel.") Moreover, Section 4.2.1 of ANSI/ANS-8.3 relating to individual, unrelated, areas is satisfied on account of the very low concentration of ^{235}U within the process buildings.

In addition to the above, WEC has already established the criteria and conservative compensatory actions in its submittal of the characterization plan included as Appendix A to Reference 1, for which WEC has requested NRC concurrence to proceed with the characterization activities. This characterization effort is required to fully comply with the corrective action letter, as noted in Reference 2. Upon completion of the characterization phase,

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2 It is also Westinghouse interpretation that given the status of the process buildings and their contents and the decommissioning status of the facility, material potentially subject to criticality monitoring requirements was not being "handled, used or stored." However, because Westinghouse is requesting an exemption, this issue is not being pursued.

3 Submission of this exemption request is without waiver or prejudice to Westinghouse's legal position which may be asserted in enforcement or other context that no exemption is required.

WEC will comply with the corrective action letter and seek concurrence from NRC before proceeding with the building demolition phase of the project.

Any specific activities necessary to remove residual uranium can be accomplished under the existing SNM-33 license, Section 9.D.2 and in accordance with the HDP nuclear criticality safety (NCS) program. Nuclear Criticality Safety evaluations currently in place and previously subject to NRC inspection provide the necessary evaluations and controls to safely remove any residual uranium. These controls were utilized during the Hematite primary interface removal project to remove substantially larger amounts of SNM, and WEC will apply this approach in an area by area basis until conditions are established which allow for demolition of the process buildings to proceed. The existing NCS program for building interface removal authorizes only limited disassembly at one time to preclude the potential to spill or accumulate in excess of 700g ^{235}U. Thus, just utilizing the existing NCS controls ensures that efforts to remove residual SNM would be no concern, irrespective of the total amount of ^{235}U finally determined to remain within the buildings.

Please do not hesitate to contact Gerald Couture, Licensing Manager of my staff at 803-647-2045, should you have questions or need any additional information.

Sincerely,

Ron Outten FOR

E. Kurt Hackmann
Director, Hematite Decommissioning Project

Enclosure: Technical Basis for the 10 CFR 70.24 Exemption Request For Process Buildings At The Hematite Site

cc: J. Caldwell, Regional Administrator
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ATTACHMENT

Technical Basis for the 10 CFR 70.24 Exemption Request For Process Buildings At The Hematite Site

Attachment to HEM-09-9
Date: February 5, 2009

Westinghouse

Hematite Decommissioning Project

TECHNICAL BASIS FOR THE 10 CFR 70.24 EXEMPTION REQUEST FOR PROCESS BUILDINGS AT THE HEMATITE SITE

WESTINGHOUSE ELECTRIC COMPANY
HEMATITE, MISSOURI

February 04, 2009

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EXECUTIVE SUMMARY

Recent radiological surveys performed within the Hematite facility process buildings have identified piping with elevated radiation levels which were not previously accounted for in estimates of the residual mass of uranium in the buildings.

The results of these recent radiological surveys have been used to refine the ^{235}U mass inventory within each of the individual process buildings. Based on the very low concentration of ^{235}U within each building (and consistent with the guidance provided in Section 4.2.1 of national consensus standard ANSI/ANS-8.3), the process buildings have collectively been separated into five individual facility "areas" which may be considered unrelated for the purpose of evaluation of the facility's compliance with 10 CFR 70.24.

The physical separation of the residual uranium within each of the five individual facility areas assures that there is essentially no neutronic coupling or interaction between the uranium in any one area and that in an adjacent area. Such physical separation is also true for nearly all the uranium within each area as it is mostly located in small diameter fixed piping. Even for extreme upset conditions such as an earthquake, or fire followed by fire suppression activities, there is no credible scenario that could result in the accumulation of fissile material into a denser configuration than it is now found.

Based on analysis of the radiological survey data obtained to date, the estimate of the uranium mass associated with the five individual facility areas is dominated by uranium deposited within small diameter piping, at a very low linear density. The most heavily loaded facility area is Area 4, which was reported to contain a total of 624 g^{235}U, of which 539 g^{235}U was estimated to be associated with four small diameter pipes. Refinements of the mass values in each facility area will occur as additional Non-Destructive Assays (NDA) are performed and as the analytical methods used to correlate dose rates to ^{235}U mass values are refined. Preliminary refinements of the analytical methods have resulted in decreases in the reported ^{235}U mass estimates for piping. Coupled with bounding assumptions employed in the refined analysis (e.g. UO_2 enrichment is conservatively assumed to be at 5 wt.% $^{235}U/U$ (the maximum enrichment permitted in the site license SNM-33), there is a high degree of assurance that the reported ^{235}U mass total for piping in the most heavily loaded area (Area 4) bounds the actual mass total in that area, and that Area 4 bounds all other areas.

The ^{235}U subcritical mass limit for Low Enriched Uranium (LEU) oxide at 5.0 wt. % $^{235}U/U$ enrichment is provided in national consensus standard ANSI/ANS-8.1 with a reported value of 1640 g^{235}U. It is noted that this limit is based on a homogeneous, uranium-water medium at optimum moderation in a spherical geometry of about 30 liters (8 gallons) and with a thick water reflector and no other (neutron absorbing) materials present. The reported estimate of uranium mass in the most heavily loaded facility area (Area 4) is dominated by the contents of four small diameter pipes with a maximum outer-diameter of 3.5" containing a total of only 539 g^{235}U. Even though this piping is intrinsically subcritical due to its small diameter, the reported mass estimate is only one third of the subcritical mass limit for optimum geometry, moderation and reflection. These facts provide compelling reasons to conclude that there is no credible threat of a criticality accident within any of the five individual facility areas.

National consensus standard ANSI/ANS–8.3 (endorsed by the NRC) recommends consideration of the provision of a CAAS when there is a non-trivial risk of criticality. Given the absence of any credible criticality accident scenario, an active CAAS is not indicated for the situation at the Hematite facility. Adjusting the 10 CFR 70.24 threshold to address 5 wt % $^{235}U/U$ enriched uranium provides a threshold value of 1240 g^{235}U (c.f. the 10 CFR 70.24 threshold value of 1500 g^{235}U for 4 wt % $^{235}U/U$ enriched uranium), signifying that there is no technical requirement for a CAAS. In addition, the presence of a CAAS exposes personnel to the risk associated with response to false alarms and this unwarranted added risk is also to be considered when implementing the recommendations of ANSI/ANS–8.3. Since there is no credible criticality accident scenario or technical requirement to justify maintaining a CAAS, deployment of a CAAS would unnecessarily expose personnel to the non-trivial safety risk associated with response to false alarms.

1.0 INTRODUCTION

In accordance with 10 CFR 70.17(a), Westinghouse Electric Company LLC is requesting an exemption from the requirements of 10 CFR 70.24(a) to maintain in each area in which 700 grams of contained ^{235}U (1500 grams if no uranium enriched to more than 4 wt.% $^{235}U/U$ is present) is handled, used or stored, a criticality monitoring system for process buildings on the site to permit further characterization and subsequent demolition. This filing provides the technical bases for Westinghouse's position that the grant of such exemption will not endanger life or property or the common defense and security and is otherwise in the public interest.

The Hematite Decommissioning Project (HDP) includes the demolition of six adjacent process buildings with some common walls. These process buildings are shown in Figure 1. These were formerly used for fuel manufacturing operations. Accountable uranium inventory was removed and Decontamination and Decommissioning (D&D) of equipment and surfaces within the process buildings was undertaken following cessation of fuel manufacturing operations in 2001. This effort resulted in the removal of the majority of process piping and equipment from the buildings. At the conclusion of that project phase, the accessible surfaces of the remaining equipment and surfaces of the buildings were sprayed with fixative in preparation for building demolition. Also it was after this phase that that the CAAS was removed, with NRC concurrence.

The current condition of the process buildings is far removed from the conditions that existed prior to initiation of the D&D work. The existing conditions are generally typified by empty process buildings, with a relatively small quantity of remaining equipment, ventilation ducts and piping. The majority of the remaining equipment was cleaned and inspected during that project phase, and accessible surfaces sprayed with fixatives to lock-down any surface contamination.

Recent radiological surveys performed within the process buildings have allowed for a preliminary estimate of the ^{235}U mass remaining within the buildings as residual contamination. These recent radiological surveys encompassed the majority of items with elevated radiation levels. While other items with elevated radiation levels may exist within the buildings that have not yet been identified, it is expected that their contribution to the estimate of ^{235}U mass remaining within the buildings will be small. This is because the measurements of gamma radiation levels that were used to generate the reported ^{235}U mass estimates included the identified locations within the process buildings likely to contain significant amount of residual uranium.

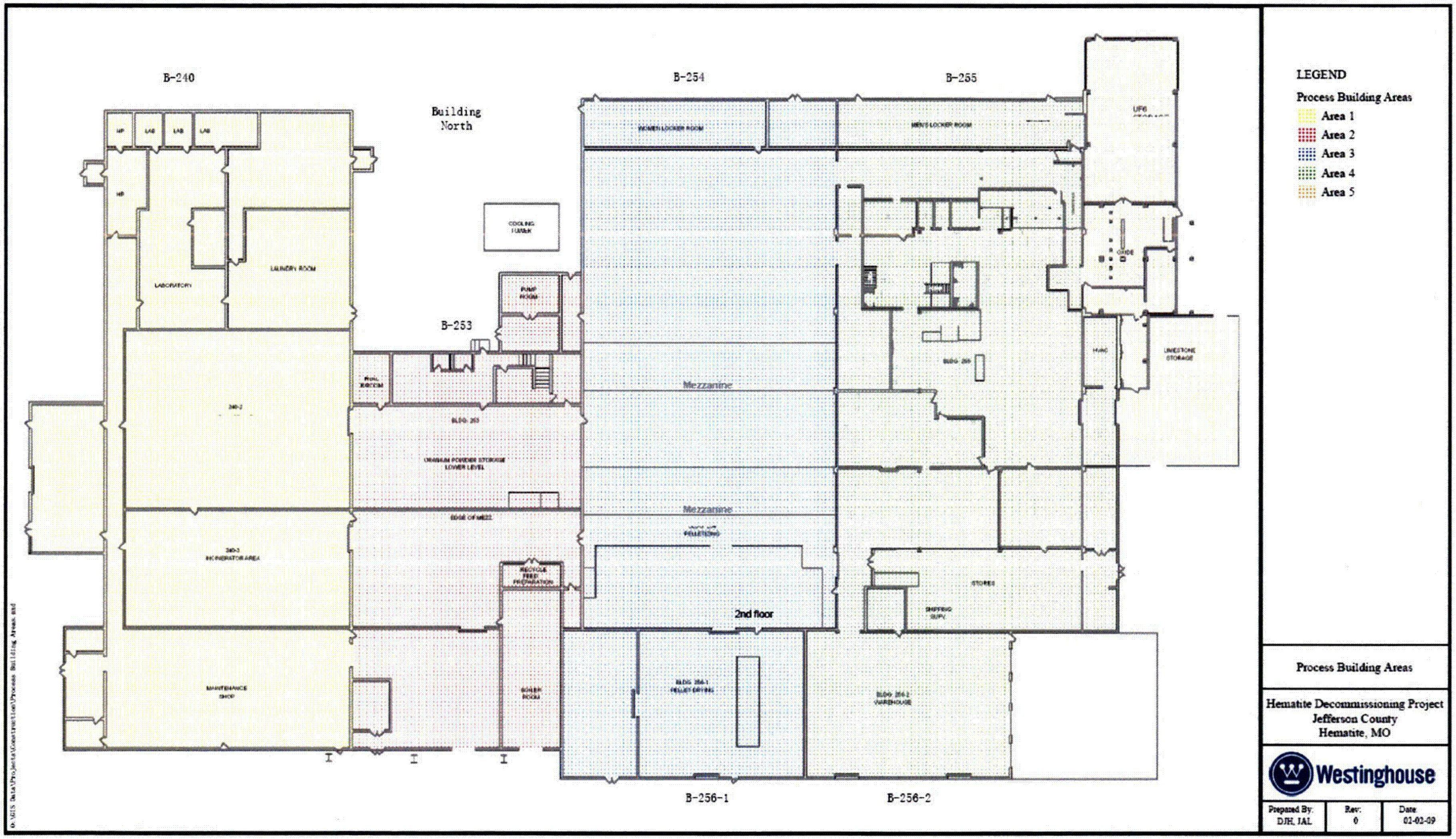

Figure 1 Hematite Site Process Buildings and Delineation of Facility Areas

2.0 MASS ESTIMATES

The results of recent radiological surveys have permitted estimation of the ^{235}U mass within each of the individual process buildings. Considering the very low concentration of ^{235}U within each building, the process buildings have been grouped to create five individual facility "areas", which are unrelated for the purpose of evaluation of the facility's compliance with 10 CFR 70.24. This facility area delineation satisfies the criteria provided in Section 4.2.1 of national consensus standard ANSI/ANS-8.3, which is endorsed in Regulatory Guide 3.71, and complies with the "area" terminology employed in 10 CFR 70.24.

Based on analysis of the radiological survey data obtained to date, estimates of the ^{235}U mass associated with residual uranium in each of the five individual facility areas are dominated by uranium deposited within small diameter piping, at a very low linear density. The ^{235}U mass estimates for piping are based on extensive contact dose rate measurements encompassing 418 linear feet of piping with elevated dose rates, comprising thousands of individual dose rate measurements.

Table 1 presents both reported and un-reported, recently refined, estimates of the ^{235}U mass associated with residual uranium in each of the five individual facility areas. The estimated contribution from piping is also indicated. The data in the "un-reported refined" columns are discussed below.

Table 1 Estimates of ^{235}U Mass

Facility Area	Encompassed Buildings	Reported ^{235}U Mass Estimate (g)		Un-Reported Refined ^{235}U Mass Estimate (g)	
		Area Total	Piping Only	Area Total	Piping Only
1	240, Maintenance Building & Misc. Non-Production Buildings	65	0	121	0
2	253	44	0	74	0
3	254, 256-1	338	215	275	36
4	255, 256-2	624	539	608	453
5	UF_6 Storage Building, Oxide Building & Limestone Storage Building	215	137	337	226

The residual uranium in each building is in the form of Uranium Oxide (UO_2) and based on radial measurements of the piping, appears to be present largely as a very low concentration layer on the bottom of piping, rarely exceeding 2 g^{235}U per linear foot. To a lesser extent, the residual uranium also exists as contamination on the structural surfaces of the buildings and the surfaces of decommissioned equipment, such as filter housings.

Under current conditions there is no mechanism for the uranium in one area to commingle with that in an adjacent area. For this reason, and due to the neutronic isolation provided by the very low concentration of the uranium and the walls associated with the various buildings separating the individual areas, the inventory in each area has been considered individually from a criticality safety risk perspective in accordance with 10 CFR 70.24. Since the uranium is generally present under the same physical conditions in each facility area and is exposed to the same potential upset conditions such as earthquakes and fires, the incredibility argument for a criticality accident need only be made for facility Area 4, which has the largest inventory and which would bound the criticality risk for all five areas.

The "reported" ^{235}U mass estimates that are associated with contamination of the structural surfaces of the buildings were multiplied by a factor of two in the "refined" ^{235}U mass estimates to ensure adequate consideration of the measurement geometry and the effects of the material surface on the efficiency for detection.

The portion of the "reported" ^{235}U mass estimates that are associated with piping (Table 1) were established using a prior analytical method that correlates contact dose rate measurements to ^{235}U mass values. The analytical method used was the same method that was employed for D&D dismantling operations already conducted. The D&D criticality safety analysis did not identify any credible criticality accident event sequences for disturbance of low concentration uranium residues within piping. Therefore, the analytical method that was developed was most suitable to the discovery of significant quantities of uranium, in compliance with the criticality safety program for D&D dismantling operations. The recent use of this same analytical method to obtain the reported ^{235}U mass estimates did not produce a precise assessment of ^{235}U mass due to the very low concentration of the uranium residue within the favorable geometry piping.

The analytical method used to establish the reported ^{235}U mass estimates associated with piping was recently refined to permit a more accurate, yet still conservative, assessment of the uranium loading within surveyed piping remaining in the various process buildings. The intent was to strengthen the analytical method by refining the modeling assumptions (e.g. use of limiting values for enrichment and density of the UO_2 deposited within the piping) and to eliminate or reduce the effect of modeling treatments and assumptions that were unduly conservative.

The "refined" ^{235}U mass estimates associated with piping (Table 1) show a substantial reduction (of the order of ~200 g^{235}U) in the ^{235}U mass estimate for facility Area 3 because the process piping within Area 3 has very low radiation levels, for which the conservatisms in the analytical method used to generated the reported ^{235}U mass estimate had a very large (amplifying) effect. For example, rounding of all mass values up to the nearest integer has a substantial effect on the total mass estimate for large lengths of piping with very low (slightly above background) radiation levels.

The refined ^{235}U mass estimate for Area 4 piping also shows a significant reduction (of the order of ~100 g^{235}U) from the reported piping estimate, mainly due to the correction of the contribution of the dose rate measurements for the three pipes that are in very close proximity.

The refined ^{235}U mass estimate for Area 5 piping has increased by a significant amount (of the order of ~100 g^{235}U) due to relatively high radiation levels within one of the pipes in that area, for which the analytical method refinements actually resulted in higher inventory estimates. However, the refined ^{235}U mass estimate for Area 5 is still only approximately 55% of the Area 4 total – the most-heavily-loaded facility area.

In summary, the refined ^{235}U mass estimates detailed in Table 1 show that the recently reported ^{235}U mass estimate for the most heavily loaded facility area (Area 4) is an upper bound. Based on the bounding assumptions employed in the refined piping analysis (e.g. use of limiting values for enrichment and density of the UO_2 deposited within the piping) there is a high degree of assurance that the reported ^{235}U mass total for piping in the most heavily loaded area (Area 4) represents an upper bound for the actual mass associated with piping in that area.

Based on the results of the analytical method discussed above, it is expected that when refined NDA measurements and analyses are performed, the reported ^{235}U mass estimate associated with piping will be lowered. Considering the factor of two increase already applied to the refined ^{235}U mass estimates associated with contamination of the structural surfaces of the buildings (as previously described), a non-trivial increase in the ^{235}U mass totals for each facility area is not foreseen. While other items with elevated radiation levels may exist within the buildings that have not yet been identified, it is expected that their contribution to the estimate of ^{235}U mass remaining within the individual facility areas will be small. This is because the measurements of gamma radiation levels that were used to generate the reported ^{235}U mass estimates included the identified locations within the process buildings likely to contain significant amount of residual uranium.

3.0 SUBCRITICAL URANIUM LIMITS AND DEFENSE IN DEPTH

The subcritical mass limit for dry UO_2 with 5.0 wt. % $^{235}U/U$ enrichment is infinite; moderation is required to attain the critical state. The subcritical mass limit for an optimally moderated solution in a spherical, thick water-reflected geometry is provided in ANSI/ANS-8.1, Table 6, for UO_2F_2 solutions. This uranium solution is essentially neutronically identical to a homogeneous UO_2-water mixture. The subcritical limit is reported as 1640 g^{235}U, which corresponds to a contained UO_2 mass of 37.2 kg at 5.0 wt. % $^{235}U/U$ enrichment. Thus, the reported estimate of uranium mass in the most heavily loaded facility area (Area 4) is only 38% of the subcritical limit - clearly a large safety factor even under idealized conditions.

It is important to appreciate the conservatisms implicit in the subcritical limit discussed in the preceding paragraph in light of actual conditions in the buildings at the Hematite facility. Not only is the estimated uranium mass well below that required to achieve the critical state, but the physical conditions associated with this subcritical limit could not be realized in any of the facility areas under any postulated upset scenarios. For example, while some moderation could be introduced (e.g. from fire fighting actions), optimum moderation is not credible given the location of the material within hundreds of feet of small diameter piping. Furthermore, the potential for all the uranium within any facility area to somehow displace from the piping and building surfaces and collect and suspend homogeneously in a several-gallon near-spherical geometry is not credible. Finally, the presence of much larger quantities of non-fissile material (e.g. the iron associated with piping) provides effective thermal neutron absorption, ensuring that even larger quantities of uranium would be required to achieve the critical state.

In summary, there are at least five parameters; mass, moderation, geometry, reflection, and absorption, that are important in all upset scenarios. The defense in depth associated with only the first three of these is such as to make a criticality accident not credible. Clearly a multiple contingency condition exists in this situation.

4.0 ANSI/ANS-8.3 CONSIDERATIONS

The national consensus standard for CAASs, ANSI/ANS-8.3, which is endorsed by the NRC (with exceptions not relevant here) makes a seemingly obvious, but very important, safety point. In section 4.1.1 it is noted that a CAAS should only be installed when it will result in a reduction in total risk. Stated conversely, a CAAS should not be installed when it will result in an increase in personnel risk. The standard also makes it clear that the hazards associated with false alarms are an important consideration. Given that there is no credible risk of a criticality accident within any of the Hematite facility process buildings, the hazards associated with personnel evacuating from false alarms clearly increases personnel risk. Thus an active CAAS would be inconsistent with the guidance in this standard.

A second, relevant aspect of the guidance provided by ANSI/ANS-8.3 is contained in Section 4.2.1, which states:

> *"The need for criticality alarm systems shall be evaluated[4] for all activities in*

[4] In Regulatory Guide 3.71, the NRC's endorsement has an exception (among others not applicable here) which states that a criticality monitoring system is required in each case in which special nuclear material greater than 700 grams of ^{235}U in any area:

> The guidance on criticality accident alarm systems, as specified in ANSI/ANS-8.3-1997 (reaffirmed in 2003), is generally acceptable to the NRC staff. An exception is that 10 CFR 70.24, "Criticality Accident Requirements," requires criticality alarm systems in each area in which

which the inventory in individual unrelated areas exceed 700 g of U-235..."

and

"For this evaluation, individual areas may be considered unrelated when the boundaries between the areas are such that there can be no interchange of materials between areas, the minimum separation between material in adjacent areas is 10 cm, and the areal density of fissile material averaged over each individual area is less than 50 g/m^2"

The ^{235}U mass estimates shown in Table 1 for each area are less than the 700 g^{235}U subcritical limit specified in Section 4.2.1 of ANSI/ANS-8.3, but more importantly, when this 700 g^{235}U limit is adjusted to 5 wt.% ^{235}U/U enrichment, the corresponding subcritical limit from ANSI/ANS-8.1 (as stated previously) is 1640 g^{235}U. This limit provides a more realistic measure of the safety margin for uranium present within each of the five facility areas. For the same reasons, the larger mass limit based on 5 wt.% ^{235}U/U enrichment also provides a more relevant criteria for assessing when an alarm system evaluation should be performed - in the absence of other criteria. However, given that the uranium is largely distributed throughout piping that meets the spacing and areal density criteria of Section 4.2.1 of ANSI/ANS-8.3, this standard does not require an evaluation of the need for an alarm system.

5.0 10 CFR 70.24 CONSIDERATIONS

10 CFR 70.24 requires that a CAAS be operating in areas where uranium, with a maximum enrichment of 4.0 wt.% ^{235}U/U, is present in a quantity exceeding 1500 g^{235}U, unless an exemption has been granted. From a technical viewpoint, a minor adjustment (using the subcritical limits reported in Table 6 of ANSI/ANS-8.1) from 4.0 wt.% ^{235}U/U enrichment to 5.0 wt.% ^{235}U/U enrichment yields a threshold mass (for deploying a CAAS) of 1240 g^{235}U at 5.0 wt.% ^{235}U/U enrichment. Since the reported estimate of the ^{235}U mass in the most heavily contaminated facility area (Area 4) is only 624 g^{235}U, and the facility areas are isolated based on the criteria in ANSI/ANS-8.3, it can be concluded that the Hematite facility process buildings are all clearly below the regulatory threshold for requiring a CAAS for future NDA and D&D activities, up to and including building demolition.

special nuclear material is handled, used, or stored, whereas Section 4.2.1 of the standard merely requires an evaluation for such areas.

6.0 CONCLUSION

The estimated inventory of ^{235}U within each of the five facility areas is far below the subcritical ^{235}U mass limit provided in national consensus standard ANSI/ANS-8.1. If this maximum subcritical mass limit were exceeded, however, two or more additional parameters would have to simultaneously exceed conditions that are independently judged to be incredible to attain, in order for the critical state to be possible. Robust defense in depth is provided by multi-parameter control (contingencies) such that a criticality accident is vanishingly remote, being far below the threshold for credibility.

Given that a criticality accident is not credible, it would be contrary to the guidance in national consensus standard ANSI/ANS-8.3 to have an active CAAS since it could only increase personnel risk. In addition, the criteria in Section 4.2.1 of ANSI/ANS-8.3 relating to individual unrelated areas are satisfied by the very low concentration of ^{235}U within the process buildings. Meeting these criteria also serves as a basis for not having to evaluate the need for an alarm system.

Finally, the estimated inventories of ^{235}U within the five individual facility areas are also well below the regulatory (10 CFR 70.24) derived threshold for provision of a CAAS.

These considerations provide ample justification for the issuance of an exemption for provision of a CAAS in the Hematite facility process buildings for future NDA and D&D activities, up to and including building demolition.