Attachment 3

Justification of Application for License Amendment

Justification of Application for License Amendment

CE Windsor Site
Windsor, Connecticut

NRC License Number 06-00217-06
Docket Number 030-03754

Introduction

This license amendment submitted by ABB Inc. (ABB) requests two important changes to Nuclear Regulatory Commission (NRC) License Number 06-00217-06 in order to facilitate timely and cost-effective decommissioning operations at its Combustion Engineering (CE) facility located in Windsor, CT (Windsor Site or Site). First is the addition of a new possession limit and specific conditions of use for materials categorized as fissile exempt. This change is focused on safety and control of waste materials from decommissioning operations containing low concentrations of special nuclear material residues. Second is the intentional mixing of waste in order to facilitate handling, packaging and transportation, and meet waste acceptance criteria (WAC) for disposal. Intentional mixing will allow an acceptable and efficient, but safe means to process a relatively small volume of waste in order to make it suitable for disposal at an off-Site disposal facility. Both of these changes are necessary to facilitate efficient and timely decommissioning operations by allowing greater flexibility for removal of low concentration special nuclear materials and allow more efficient waste transportation and disposal without loss of safety or control.

Moreover, the proposed license amendment changes are compatible with NRC's goals for the decommissioning program. As stated in the NRC's *Program Evaluation of Changes to the Decommissioning Program* (September 2003); "Because of the persistent challenges facing the Decommissioning Program as well as the high cost to licensees for decommissioning, the staff believes that its near-term goal should be to continue improving the efficiency and timeliness of decommissioning activities at all decommissioning sites without impacting safety or public confidence." The proposed changes will allow ABB to perform decommissioning more efficiently and reduce unnecessary regulatory burden associated with decommissioning at the CE Windsor Site without impacting safety of workers or the public.

The primary basis for the requested changes is to facilitate handling, transportation and disposal of large volumes of soil containing low concentrations of SNM. NRC regulations pertaining to SNM, particularly 10 CFR Part 70 and 73 were established primarily for the safe handling and control of various quantities of stock material (i.e., SNM product) for the fuel cycle. Low concentration residues being processed for transportation and disposal as waste do not pose the same hazards as stock material and therefore should not require the same level of regulatory control in order to maintain comparable safety. The NRC has previously approved similar activities and these will be specifically referenced as part of the basis for requested changes.

This document provides greater explanation of the basis for the requested changes and justification for the proposed changes as well as additional supporting documentation. Due to the limited number of active special nuclear materials (SNM) licensed sites undergoing decommissioning, the NRC has deferred changes in the regulations. The current practice is to

address decommissioning regulatory issues through the amendment process while applying potential exemptions as appropriate.

Authorization for Possession and Specific Conditions of Use of Fissile Exempt Materials

The efficient and effective decommissioning of the CE Windsor Site will require the excavation, packaging, and shipment of large volumes of contaminated soils and debris. The current radioactive material licenses for the Site incorporate possession limits for enriched uranium, based on restrictive mass limits, which place significant constraints on implementation of decommissioning of the Site where the identified contaminant is enriched uranium at very low concentrations.

The proposed possession limit change requested in this application is for a license amendment to incorporate a new possession limit that is based on the following limitations noted as "exemption from classification as fissile material" and "fissile material exception" (hereto referred as "Fissile Exempt") as incorporated in NRC regulation (10 CFR 71.15) and Department of Transportation (DOT) regulation (49 CFR 173.453), respectively for the management and transportation of radioactive material. For transportation, SNM can be exempt from classification as "fissile" if the material meets a specific ratio of fissile to non-fissile material mass. Instead of a mass limit for U-235, ABB proposes an amendment to the license possession limits that incorporates the aforementioned fissile to non-fissile material mass ratio to ensure safety during decommissioning operations. It is expected that the vast majority of waste generated during decommissioning at the Site will meet the Fissile Exempt criteria as is due to the relatively low concentrations of uranium identified during characterization.

A summary of relevant technical evaluations by the NRC associated with transportation requirements for Fissile Exempt materials and basis for current regulations is provided below.

In February 1997, NRC completed an emergency final rulemaking (62 FR 5907, February 10, 1997) to address the potential for inadequate criticality safety in certain shipments of exempted quantities of fissile material. The emergency rule revised portions of 10 CFR Part 71 that limited the consignment mass for fissile material exemptions and restricted the presence of beryllium, deuterium, and graphite moderators. The NRC solicited public comments on the emergency rule, and comments were received that supported the need for the emergency rule, but argued that the restrictions imposed therein were excessive. For example, several commenters noted that they had shipped wastes that violated the emergency rule in the past without any problems and that the new restrictions would at least double the number of waste shipments, thereby increasing costs, decreasing worker safety, and increasing the risk of accidents.

The NRC had Oak Ridge National Laboratory study the issue in greater detail and in July 1998, NUREG/CR-5342, *Assessment and Recommendations for Fissile-Material Packaging Exemptions and General Licenses Within 10 CFR Part 71* was issued. The results of this study generally indicated that the likelihood of accumulating sufficient fissile material to achieve criticality is highly improbable; such an occurrence would require the complete loss of packaging and an idealized spherical configuration under normal and/or accident conditions. One of the scenarios evaluated in this study was 100% enriched U-235 homogeneously mixed with silicon dioxide and water. This matrix was selected since it could represent dirt, glass or

common solid waste. In addition, a new ratio of fissile to non-fissile material was recommended for Fissile Exempt material of one (1) gram fissile to 2,000 grams non-fissile for low concentration solid materials.

The NRC agreed with the suggested changes in NUREG/CR-5342 with respect to exemption from classification as fissile material. In March 2001, the NRC provided analyses and technical evaluations related to Fissile Exempt materials for transportation in Commission Paper SECY-2001-0035, *Proposed Rule for Revising 10 CFR Part 71 for Compatibility with IAEA Transportation Safety Standards [TS-R-1], and for Making Other NRC-Initiated Changes*. More specifically, Issue 16 of the Commission Paper addressed fissile material exemptions. This is the basis for the current regulations addressing low concentration solid Fissile Exempt materials in the NRC and DOT. Pertinent sections of these regulations are provided as reference below.

10 CFR 71.15 Exemption from classification as fissile material (Excerpt from Regulation)
Fissile material meeting the requirements of at least one of the paragraphs (a) through (f) of this section are exempt from classification as fissile material and from the fissile material package standards of §§71.55 and 71.59, but are subject to all other requirements of this part, except as noted.

(c)
- (1) Low concentrations of solid fissile material commingled with solid non-fissile material, provided that:
  - (i) There is at least 2000 grams of solid non-fissile material for every gram of fissile material, and
  - (ii) There is no more than 180 grams of fissile material distributed within 360 kg of contiguous non-fissile material.
- (2) Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass of solid non-fissile material.

49 CFR 173.453 Fissile materials-exceptions (Excerpt from Regulation)
Fissile materials meeting the requirements of at least one of the paragraphs (a) through (f) of this section are excepted from the requirements of this subpart for fissile materials, including the requirements of §§173.457 and 173.459, but are subject to all other requirements of this subpart, except as noted.

(d) Low concentrations of solid fissile material commingled with solid non-fissile material, provided that:
- (1) There is at least 2000 grams of non-fissile material for every gram of fissile material, and
- (2) There is no more than 180 grams of fissile material distributed within 360 kg of contiguous non-fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass of solid non-fissile material.

In addition to evaluations related to criticality safety to transportation, similar studies have been performed for disposal of similar materials. In November 1994, NRC issued NUREG/CR-6284, *Criticality Safety Criteria for License Review of Low-Level Waste Facilities.* This study provided nuclear criticality safety levels for disposal of materials in terms of areal density (grams per square foot). Later the NRC issued NUREG/CR-6505, *The Potential for Criticality Following Disposal of Uranium at Low-Level Waste Facilities* in June 1997. This study provided nuclear criticality safety levels for disposal of materials in terms of concentration limits. NUREG/CR-6505 is the technical basis for the current WAC for disposal of SNM. The WAC for enriched uranium comparable to transportation requirements includes a limit for U-235 concentration of 1,900 pCi/g for enrichments less than 10% or 1,190 pCi/g for enrichments of 10% or greater. Moreover, NUREG/CR-6505 is the basis for nuclear criticality safety that has been accepted by the NRC for previous decommissioning activities at the CE Windsor Site under its Decommissioning Plan (DP).

Since there are different criteria for transportation (mass ratio) and disposal of low concentration enriched uranium (radionuclide concentration), a comparison will be performed. Conversion of the of transportation requirements from mass ratio (2,000 grams non-fissile for every gram fissile) to radionuclide concentration results in a U-235 concentration of 1,080 pCi/g. Since this concentration is less than the WAC for enriched uranium, the Fissile Exempt concentration for transportation is the most conservative and limiting value. Furthermore, materials that meet the transportation requirements for Fissile Exempt will also be acceptable for disposal since U-235 concentrations will be less than WAC limits.

In addition, shipments of decommissioning waste must adhere to the definition of Fissile Exempt. Otherwise, the shipments would have to be made in NRC approved containers for the transport of fissile material. Currently, there are no appropriate licensed containers for the shipment of large volumes of low concentration SNM materials. The definition of Fissile Exempt is based on the assumption that the fissile material is pure U-235 (i.e. 100% enrichment), therefore the applicable regulations for the transport of the waste from the nuclear criticality safety standpoint are conservative for any material that may be encountered during decommissioning at the CE Windsor Site.

Another potential concern regarding Fissile Exempt materials is security. In NRC Regulatory Guide 5.59, *Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance* states that the quantity of concern for gross theft is estimated as 75 kg of U-235. At the Fissile Exempt concentration (1,080 pCi/g for U-235), this amount converts to approximately 165 tons of waste material. As part of the evaluation for WAC and an Order exempting the disposal facility from requirements relative to possession of SNM published in 68FR74986-74988, the NRC stated:

> *Safeguarding SNM against diversion or sabotage is not considered a significant issue because of the diffuse form of the SNM in waste meeting the conditions specified*.

Since the Fissile Exempt criteria for transportation is less than the WAC, it stands to reason that material meeting Fissile Exempt should not be considered a significant security issue since diversion or sabotage of low concentration material is not a practical threat. Therefore, once material has been demonstrated to meet the noted limitations of Fissile Exempt, no additional physical protection measures under 10 CFR Part 73 for SNM would be required.

There are several examples where the NRC has given specific approval for handling of enriched uranium in low concentrations similar to this request. Following is a brief synopsis of pertinent information associated with each example facility. However, limited information is readily available due to the nature of the material (criticality and physical security).

Case Study #1

The Union Carbide facility in Lawrenceburg, Tennessee (Docket Numbers 070-00784 and 040-07044) was involved in uranium fuel research, development and production, including highly enriched uranium. A Remediation (Decommissioning) Plan was submitted to NRC in August 1998. However, there was no specific information submitted with respect to nuclear criticality safety and the following was stated with respect to physical security. "Although residual radioactivity containing enriched uranium (up to 93% U-235) has subsequently been identified in some localized areas, the levels of radioactivity are very low and the nature of the radioactivity (present only as residual contamination in soil/sediment and on structural surfaces) makes it inaccessible from a material control and physical security standpoint. Therefore, UCAR does not anticipate that a physical security plan or a material control plan is required."

The NRC performed an inspection at the Union Carbide facility in February 2005. The inspection report identified 16 intermodal waste containers that were stored on site awaiting disposal with an estimated total of 2,000 grams U-235. Concentrations of U-235 in the individual intermodal containers varied, but the limited data available indicates that average concentrations of U-235 in these containers were on the order of 20 pCi/g. This amount is well below the Fissile Exempt criterion of U-235 concentration of 1,080 pCi/g. In addition, there was no indication of any criticality or physical security measures implemented for remediation activities, storage or disposal of the waste.

Case Study #2

The Nuclear Fuel Services facility in Erwin, Tennessee (Docket Number 070-00143) has performed remediation on areas associated with legacy waste materials on the north end of this site. NRC issued an exemption from certain transportation and security requirements for the transportation of low concentration waste containing highly enriched uranium.

Case Study #3

There are several Babcock & Wilcox facilities in western Pennsylvania associated with enriched uranium. These include the Shallow Land Disposal Area (SLDA) (Docket 070-03085), Parks site (Docket Number 070-00364), and Apollo site (Docket Number 070-00135). Licensed effluent from the Apollo site impacted a waste water treatment facility, the Kiski Valley Water Pollution Control Authority, which is not licensed by the NRC. The

source of the contamination is believed to be the uranium liquid effluent from the Apollo site, which were reconcentrated in the contaminated ash from incineration of the sludge.

The Kiski Valley Water Pollution Control Authority site was found to have approximately 320,000 cubic feet of contaminated ash with 4% enriched uranium having a maximum concentration of 923 pCi/g total uranium and an average concentration of 80 pCi/g total uranium. Furthermore, the contaminated ash was highly heterogeneous with respect to uranium concentrations. Estimated maximum U-235 concentration is 40 pCi/g and average concentration of 4 pCi/g, which are within the Fissile Exempt criteria of 1,080 pCi/g. The NRC issued an Environmental Assessment and Finding of No Significant Impact for the ash in 70FR925-928. The conclusion was that the site meets the NRC's criteria for unrestricted use under the License Termination Rule and that the ash could be removed and disposed of as solid waste. There were no requirements for nuclear criticality safety or physical security of these low concentration materials.

Processes involving Fissile Exempt materials will be done in accordance with NRC license conditions, Site procedures and plans. The approach will be as follows. The amount and concentration of SNM for an area will be determined prior to decommissioning operations. This data will determine the volumes of soil or materials that are acceptable to be removed for nuclear criticality safety as described in the DP. This is a combination of concentration and mass criteria for U-235. No criticality safety controls will be required if volumetric concentrations of U-235 are less than 1,900 pCi/g with less than 10% enrichment or less than 1,190 pCi/g with greater than 10% enrichment. No criticality controls will be required if the mass of U-235 in the materials being handled is less than 350 grams. As materials are excavated or removed from the area and taken into possession, they will be placed into appropriate containers. Confirmation samples and surveys will be performed and the concentration and mass of SNM for the container will be calculated and added to the primary SNM inventory under the current license category for SNM. These materials are also subject to nuclear criticality controls and physical security requirements as necessary according to license conditions, DP, and the Site Physical Security Plan.

Once the packaged materials have been determined to meet the Fissile Exempt criteria, they will be transferred from the standard SNM inventory to a waste inventory, and the license category will change from SNM to Fissile Exempt. In addition, once materials have been categorized as Fissile Exempt, they would no longer be subject to nuclear criticality controls, physical security requirements or mass (gram) possession limits. This process will maintain sufficient documentation and control of the material to ensure nuclear criticality safety during decommissioning operations, security, and accountability of the material while it remains at the Site. The primary SNM inventory will represent the standard SNM license category with a mass based limit, and the waste inventory will represent SNM waste with a fissile to non-fissile ratio based limit as opposed to a gram limit. Reporting of SNM transactions and inventory to Nuclear Materials Management & Safeguards System (NMMSS) will be conducted in accordance with NRC regulations.

For comparison, the Site-specific soil DCGL is 557 pCi/g total uranium, of which approximately 24 pCi/g is attributed to U-235, whereas the Fissile Exempt criterion is U-235 concentration of 1,080 pCi/g. The CE Windsor Site soil to be addressed under decommissioning contain an average concentration of U-235 approximately 60 pCi/g and maximum of about 5,000 pCi/g from a population of 1,500 data points. Furthermore, only 0.5% of the data points exceed U-235 concentration of 1,080 pCi/g. It is clear that a significant amount waste generated during decommissioning will meet this criterion "as is" since the Fissile Exempt criterion is 45 times larger than the DCGL equivalent for U-235. In addition, it is anticipated that only trace amounts of lead, beryllium, graphite, and hydrogenous material enriched in deuterium would be encountered during decommissioning operations, if at all, that could potentially be present in the waste materials. Materials that do not meet the Fissile Exempt criterion "as is" will be addressed in the next section regarding intentional mixing to meet the WAC.

This evaluation has shown that low concentration enriched uranium waste materials do not pose a criticality or security concern and that the NRC has approved or allowed similar activities with these types of materials. The proposed amendment request would allow decommissioning operations to proceed more efficiently with no adverse consequences to security or safety. In addition, it will allow more effective transportation of waste to the disposal facility which will greatly reduce the risk of industrial and traffic accidents.

Proposed License Conditions
Based upon the provided technical basis and justification, ABB requests that the proposed license conditions for fissile exempt materials be the following:

> "SNM packaged for transportation that meets the Fissile Exempt ratio of at least 2,000 grams solid non-fissile material for every gram of fissile material may be handled, stored and transported for disposal without any additional nuclear criticality safety controls or mass based limits and are exempt from SNM security (physical protection) requirements of 10 CFR Part 73."

Intentional Mixing to Meet Waste Acceptance Criteria
ABB proposes to intentionally mix waste in order to meet waste acceptance criteria at off-Site disposal facilities. The NRC has indicated that this is an acceptable practice as described in Commission Paper SECY-04-0035, *Result of the License Termination Rule Analysis of the Use of Intentional Mixing of Contaminated Soil*. This process will follow the guidance provided by the NRC in NUREG-1757 Volume 1 Revision 2, Section 15.13. Since uranium is not listed in Table 1 or 2 of 10 CFR 61.55, it is classified as "Class A" waste. Therefore intentional mixing of uranium wastes will not change waste classification since it will always be Class A waste. The following describes the process, materials, equipment, radiological surveys and sampling in order to meet the WAC for off-Site disposal.

In order to dispose of decommissioning low level radioactive waste at an off-Site disposal facility, the materials need to meet the WAC for the facility. It is anticipated that low level radioactive waste (LLRW) generated during decommissioning will be sent to EnergySolutions disposal facility in Clive, Utah. WAC for this facility is a combination of regulatory and license specific requirements. In addition, this disposal facility has an exemption from 10 CFR Part 70

so waste containing SNM has additional requirements including exemption certification. Specified limits for waste containing SNM in the WAC include SNM isotope concentration limits, spatial distribution requirements, bulk chemical limits, unusual moderator limits and soluble uranium limits. In addition, waste will need to meet the Fissile Exempt criteria discussed previously in order to meet transportation requirements to facilitate shipment of the waste from the CE Windsor Site to the disposal facility.

There are limited amounts of materials identified during characterization that will not meet Fissile Exempt criteria or WAC during decommissioning operations. From the current data set, less than 1% of the U-235 results exceed Fissile Exempt and WAC concentrations. Intentional mixing of waste is anticipated for the following scenarios: mixing soil or soil-like materials, mixing soil or soil-like materials containing small debris, or mixing large debris with soil or soil-like materials. Characterization data along with radiological surveys and sampling during decommissioning operations will be utilized to identify materials that will require intentional mixing for off-Site disposal. Waste generated during decommissioning activities will consist of low activity residues in soil, sediment, debris and building materials. There is no known product or stock material remaining.

Intentional mixing of soil or soil-like material will be conducted using the simplest approach possible. The waste streams are not homogenous with respect to uranium concentrations and intentional mixing will not attempt to achieve homogeneity. Intentional mixing will be done to the level necessary in order to meet the Fissile Exempt and WAC for off-Site disposal. In this regard, material that has been intentionally mixed will not be significantly different than other wastes generated during decommissioning operations. Heterogeneity of waste will be addressed by additional radiological surveys and sampling in order to demonstrate that Fissile Exempt and WAC have been met.

There are several options for proposed methods of intentional mixing of soil or soil-like material. The first is mixing elevated materials during excavation / removal operations with adjacent low concentration material. This option does not require additional equipment and is simply mixing of material as it is excavated and placed into a container. Elevated and low concentration materials can be mixed by excavating small amounts of each and then combining them with the excavator bucket prior to placing into a container. The second is to mix contents from one container (higher concentration) with material from another (lower concentration) into an additional container.

An example of this scenario is soil to be removed from the Woods Area. There are localized areas of soil with elevated uranium surrounded by soil with low concentration uranium. Excavation of soils in this area will be conducted such that a small quantity of soil from the elevated areas will be excavated with an excavator, backhoe or other excavation equipment and placed in a container, and then a small quantity of low concentration soil will be excavated and placed in the same container. These materials may be further mixed inside the container. The process would be repeated until the container is filled. This excavation would be executed in such a way that the ratio of higher concentration to low concentration soil meets Fissile Exempt and WAC.

In some areas, there may be small pieces of debris mixed with soil or soil-like material which could require intentional mixing. In this case, debris may be too small to be readily separable from soil. Representative surveys and sampling of the debris and soil mixture will be evaluated prior to mixing in order to verify that intentional mixing will meet Fissile Exempt and WAC. Similar to soil or soil-like materials, proposed methods for intentional mixing include mixing during excavation / removal operations with adjacent material or mixing contents from one container with another utilizing mechanical or hand tools. Heterogeneity of waste will be addressed by additional radiological surveys and sampling in order to demonstrate that Fissile Exempt and WAC have been met.

An example of this scenario is the Clamshell Pile. In this area, there are small pieces of debris (clamshells) mixed with the soil and the amalgamation will be removed as part of remediation. Since the clamshells are not easily separated from the soil, the mixture will be sampled and compared to WAC. In the event that the U-235 concentration does not meet Fissile Exempt and WAC, some lower concentration soil from another area could be mixed at an appropriate ratio with the material from the Clamshell Pile into another container in order to meet Fissile Exempt and WAC. The operation would be conducted similar to the operation described above for the Woods Area.

In other areas, there may be larger pieces of debris which could require intentional mixing with soil or soil-like material. Here, the debris is large and may contain significantly elevated concentrations of uranium, such as an industrial waste line pipe section. In this case, the debris would be broken apart in order to facilitate mixing with soil or soil-like material. Proposed methods for intentional mixing include mixing contents from one container of soil or soil-like material into another containing debris utilizing mechanical or hand tools. Heterogeneity of waste will be addressed by additional radiological surveys and sampling in order to demonstrate that Fissile Exempt and WAC have been met.

An example of this scenario is the industrial waste line sections. There is potential for elevated uranium sediment inside the pipe sections that does not meet Fissile Exempt and WAC. In this case, the sediment would be removed from the pipe section and mixed at an appropriate ratio with lower concentration soil from another area. Due to residual surface contamination on the pipe section, it will also need to be disposed as LLRW and it can be included in the container with the soil and sediment provided it meets WAC for debris sizing.

Radiological surveys and sampling will be performed in conjunction with intentional mixing. Pre-remediation surveys and sampling will be performed to verify characterization data as well as to support nuclear criticality safety, and SNM accountability. Areas will be identified that require intentional mixing. These areas will be then be evaluated for intentional mixing options. The preferred option is mixing with deeper soil or soil from adjacent areas. If mixing with deeper or immediately adjacent soils will not meet Fissile Exempt and WAC, then mixing with lower concentration soil from other portions of the Site will be necessary. The appropriate low concentration LLRW will be determined from the available waste inventory.

After intentional mixing, waste containers will be radiologically surveyed to determine radiation levels and a preliminary indication of homogeneity. Removable contamination levels will also be measured. Radiation and removable levels will be compared to DOT transportation requirements for radioactive materials.

Volumetric samples will be collected after intentional mixing. Representative samples will be collected from each container of intentionally mixed waste. In addition, waste may be quantified by direct *in-situ* methodologies, such as gamma spectroscopy utilizing ISOCS. If the results do not indicate that SNM is homogeneously distributed, then they will be evaluated to ensure that Fissile Exempt and WAC concentration limits for U-235 are not exceeded on average in any contiguous mass of 360 kilograms of waste.

Nuclear criticality safety during intentional mixing operations will be implemented in similar fashion to that used during decommissioning operations. This is a combination of concentration and mass criteria for U-235. No criticality safety controls will be required if volumetric concentrations of U-235 are less than 1,900 pCi/g with less than 10% enrichment or less than 1,190 pCi/g with greater than 10% enrichment. In addition, no criticality controls will be required if the mass of U-235 in the intentional mixing operation is less than 350 grams. As described in the DP, concentration, enrichment and U-235 gram weight are determined prior to significant disturbance of suspect material. This was successfully implemented during previous decommissioning operations and will be followed for the remaining areas. Therefore in the interest of safety, consistency and simplicity of intentional mixing operations, batches will be constrained to the above criteria.

After intentional mixing, materials will be maintained in containers and stored according to Site procedures and license conditions for LLRW until off-Site disposal occurs. As indicated in the previous section, materials that meet Fissile Exempt criteria (U-235 concentration of 1,080 pCi/g) will have no gram possession, storage, staging or spacing limitations for nuclear criticality safety. In addition, these materials will be maintained under control, inventory and transfer in accordance with SNM accountability license requirements and Site procedures. As indicated in the previous section, once materials meet the requirements for Fissile Exempt, they will be transferred from the standard SNM inventory account to a waste inventory.

WAC for SNM will be achieved as part of intentional mixing, primarily for U-235 concentration criterion and spatial distribution requirements. Other SNM WAC include bulk chemical limits, unusual moderator limits and soluble uranium limits. The primary chemical and physical form of uranium at the CE Windsor Site is metal oxides as a solid. Uranium oxides are not soluble as defined is the WAC and NRC Safety Evaluation Report. Since nuclear fuel production operations were terminated more than ten years ago and characterization has not identified any significant amounts of bulk chemical of concern in the WAC, this criterion will not be of concern for intentional mixing or disposal of decommissioning wastes. No significant quantities of unusual moderators have been identified during previous decommissioning activities or characterization of the remaining areas so this criterion will not be of concern for intentional mixing or disposal of decommissioning wastes.

Summary

ABB has requested these changes to NRC License Number 06-00217-06 in order to reduce unnecessary regulatory burden associated with decommissioning at the CE Windsor Site. As described previously, the proposed changes for authorization for possession and specific conditions of use of Fissile Exempt materials, along with intentional mixing to meet WAC will facilitate decommissioning operations without reducing safety. Fissile Exempt concentration material have been evaluated by the NRC and shown not to pose any nuclear criticality safety or SNM physical security concerns. Intentional mixing of waste to meet WAC is an acceptable practice by the NRC and the submitted information follows NRC guidance in this area. The combination of these changes will allow ABB to finish decommissioning activities in a timely and efficient manner and achieve license termination for unrestricted use.