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Docket No. 030-03754
License No. 06-00217-06
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Mr. James Schmidt
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Subject: **NRC Request for Additional Information – May 1, 2009**

References: (A) U.S. NRC Telephone Conversation Record, dated May 1, 2009

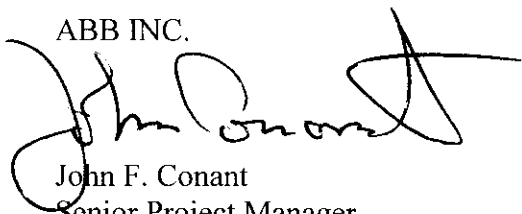
Dear Mr. Schmidt:

ABB Inc. ("ABB") is providing additional information to facilitate NRC's review of Revision 1 of the site-wide Decommissioning Plan for the CE Windsor Site at 2000 Day Hill Road in Windsor Connecticut. NRC requested additional information by telephone on May 1, 2009 (Reference A) with respect to the controls for excavation of materials during decommissioning activities. This submittal provides the requested information and documents the detailed description.

If there are any questions or comments regarding this submittal, please contact ABB's Radiation Safety Officer, Heath Downey, at (207) 939-5560 or me at (860) 285-5002 or by e-mail at john.conant@us.abb.com.

Sincerely,

ABB INC.



John F. Conant
Senior Project Manager

Enclosure

xc: Laurie Kauffman (NRC Region I)
Charles Petrillo (Town of Windsor)
Edward Wilds (CTDEP)

141686

ABB Inc.

NMSB/DCN/11/037/119-002

**Response to NRC Request for Additional Information
Dated May 1, 2009**

**CE Windsor Site
Windsor, Connecticut**

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

May 8, 2009

Request for Additional Information:

Details regarding controlled excavation at CE Windsor Site.

Response:

Several approaches will be utilized during decommissioning activities at the CE Windsor Site in order to control the accumulation of U-235 and maintain nuclear criticality safety. The basic approach employed during previous decommissioning activities under Decommissioning Plan Revision 0 included a combination of characterization or pre-excavation surveys, along with in-process surveys, and was described in a Response to Request for Additional Information dated March 26, 2004 (ML041200209). These approved processes were incorporated into Decommissioning Plan Revision 1 at Section 8.3.6 and Section 10.2.1 and provide the foundation of the nuclear criticality safety controls.

There are two basic categories of materials to be controlled during the remaining decommissioning activities to be performed at the CE Windsor Site. These categories include soils and underground utilities that do not contain radioactive contaminants significantly in excess of background, and soils and underground utilities that contain residual radioactive contaminants. The areas containing residual radioactivity at the CE Windsor Site have been identified during previous walk-over surveys and other characterizations by ABB Inc., U.S. DOE, U.S. Army Corps of Engineers, and a Historical Site Assessment. The approach and processes to ensure that the possession limit is not exceeded for each category is provided below.

Additional characterization of soil areas are planned prior to decommissioning activities to the extent necessary that mass of U-235 can be determined. Areas for removal will be planned to ensure that the U-235 grams removed at any time do not exceed 325 grams or the available balance on the license limit. If necessary, additional surveys, sampling or calculations will be performed in order to determine volumes for removal that result in accumulations that are within the available license limit or less than 325 grams. For subsurface soil areas (e.g., drum burial pit), past removal activities have indicated that large volumes of material can be removed without significant U-235 gram accumulation. Therefore, once the overburden soil has been removed in-process verification surveys will be performed prior to removal of materials for off-site disposal. Action levels will be established to allow for removal of low residual radioactivity materials. Assays of waste collection containers will be performed to verify that U-235 gram accumulation is within acceptable levels.

Characterization of underground piping will be performed once the soil covering the pipes has been removed and the excavation is safe for entry. Previous characterization and decommissioning activities have only identified industrial waste lines and hot waste lines as potentially containing significant quantities of residual uranium. For both the industrial waste and hot waste lines, pipes will be initially assayed in lengths not to exceed 12 feet. First, gamma scan surveys using NaI detectors (i.e., 2" x 2" or equivalent) will be performed on the pipe to determine the presence of elevated residual radioactivity within the pipe. Then openings on the top of the pipes will be made to allow for visual inspection and collection of sediments. A minimum of 2 samples per 12 foot section will be collected. Sediment samples will be analyzed for U-235 concentration with the on-site gamma spectroscopy system. The results of these surveys and U-235 concentration will be used to calculate the amount of U-235 in grams contained within the section of pipe. If the U-235 amount is less than 325 grams or the available balance on the license limit, whichever is smaller, then that section of pipe may be removed. If the U-235 amount in the section of pipe exceeds the applicable limit, additional surveys, sampling or calculations will be performed in order to determine the length of pipe that can be removed within the applicable limit. In any regard, pipe sections exceeding the limit, or having an unknown quantity of U-235, will not be removed or reoriented.

Other types of underground piping do not have the same potential for residual radioactivity and will be handled as follows: The sanitary piping has historically had some low concentrations of residual radioactivity and therefore will receive initial characterization similar to the industrial waste piping. No pre-removal scans or surveys of the remaining utilities (MDC water lines, fire protection lines, etc.) will be performed unless elevated soil concentrations are detected during excavation of the surrounding soils.

In-process controls for soils and underground utilities that do not contain radioactive contaminants significantly in excess of background will be performed primarily for worker protection and detection of any concentration anomalies. No significant accumulation of licensed material is expected during these operations as supported by historical data, characterization data and previous decommissioning activities at the Site. Nonetheless, in-process surveys for this category of materials or areas include periodic gamma scan surveys using NaI detectors (i.e., 2" x 2" or equivalent) and collection of soil samples or pipe sediment for analysis with the on-site gamma spectroscopy system. .

In-process controls for soils and underground utilities that contain residual radioactive contaminants include measures taken to ensure that the possession limit is not exceeded during decommissioning operations. Since accumulation of measureable amounts of licensed material is expected during these operations, evaluations and careful planning to control the quantity of U-235 accumulated at any one time will be employed. Characterization data including radiological surveys and soil or sediment U-235 concentrations will be used to determine the amount of material that can be removed at a time in order to maintain compliance with the NRC license limits. In-process surveys for this category of materials or areas include frequent gamma scan surveys using NaI detectors (i.e., 2" x 2" or equivalent) and collection of soil samples or pipe sediment for analysis with the on-site gamma spectroscopy system. In-process radiological surveys will be performed at a frequency relative to the expected concentrations of the material,

such that the materials with higher concentrations of U-235 will receive more frequent surveys. Action levels will be set for gamma scans of each category of material or area that will stop remediation activities until the U-235 gram estimate has been re-evaluated.

Additional measures may be taken to reduce uncertainty during characterization or in-process controls. These include use of a small pipe camera for visual inspections of piping, a field portable gamma spectroscopy system for in-situ characterization, and a portable scale to measure the amount of material removed during remedial operations. The equipment to perform these additional measures will be readily available at the Site for use if conditions warrant. Use of these measures will provide additional confidence to the quantification of U-235 content during characterization and accumulation.

The combination of radiological surveys and U-235 analytical data from on-site analysis for surface soil, subsurface soil areas and underground piping will provide the necessary data in order to calculate the grams of U-235 prior to actual handling of these materials. This approach will provide the necessary controls for nuclear criticality safety and allow for removal of materials for off-site disposal while maintaining U-235 grams within the license limit.