

NUCLEAR REGULATORY COMMISSION  
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Environmental Assessment of the Proposed Decommissioning Plan  
for the ABB Prospects, Inc. Windsor, Connecticut Facility

The U.S. Nuclear Regulatory Commission (NRC) is considering amending License Number 06-00217-06 issued to ABB Prospects, Inc., to authorize the decommissioning of its Windsor, CT site.

The environmental assessment (EA) reviews the environmental impacts of the decommissioning actions proposed by ABB Prospects, Inc. for their Windsor, CT facility. The NRC staff has developed this EA in accordance with the requirements of 10 CFR Part 51. In connection with the review of plans for the proposed action, NRC staff also prepared a safety evaluation report (SER), which evaluates conformance of the proposed action with NRC regulations and regulatory guidance.

## 1.0 INTRODUCTION

In a letter dated October 15, 2003, ABB Prospects, Inc. submitted the CE Windsor Site Decommissioning Plan (DP) and a request to amend NRC License No. 06-00217-06 to incorporate the DP into their license. The objective of the facility decommissioning is to remediate radiological constituents at their 600 acre site to the extent required to allow the NRC to release the property for unrestricted use. ABB Prospects, Inc. is the current holder of NRC License No. 06-00217-06 (NRC Docket Number 030-003754) for the possession of radioactive material resulting from operations at their facility located at 2000 Day Hill Road in Windsor, CT. The license was amended on October 17, 2002 (amendment 53), authorizing ABB to decontaminate and dismantle building complexes 2, 5, and 17, down to building slabs and foundations at grade. This license includes 10 structures and building footprints totaling approximately 175,000 square feet.

By letter dated December 31, 2001, ABB Prospects, Inc., notified NRC of their intent to decommission building complexes 2, 5, and 17, submitted a DP, and requested a license amendment to add the site DP to their license. On August 9, 2002, in response to an NRC request for additional information (RAI), ABB Prospects, Inc. clarified their amendment request to apply only to above grade structures, noting that full site decommissioning of below grade structures and soils would be submitted under a future license amendment request. On April 4, 2003, ABB Prospects, Inc. submitted the request for full site decommissioning, but did not provide dose modeling information. In their revised DP dated October 15, 2003, ABB Prospects, Inc., calculated site specific soil Derived Concentration Guideline Levels (DCGLs), which adequately addressed dose modeling for the site. Consideration of a license amendment request for decommissioning the ABB Prospects, Inc. facility in Windsor, CT, and opportunity for a hearing, was publically noticed in a February 6, 2004, Federal Register Notice (69 Federal Register 5879-5880).

## 1.1 Facility Operating History

From the mid-1950s, the Combustion Engineering (CE) Site in Windsor, CT has been involved in research, development, engineering, production, and servicing of nuclear fuel systems. As a result of general operations and some spills and leaks, certain buildings, waste water lines, and some land areas were contaminated with radioactive material. The site was primarily used for fuel production activities, resulting in residual contamination from uranium including the isotopes of U-234, U-235, and U-238. Radiological sample analyses of residual contamination from the site indicates the presence of enriched uranium (U-235 at concentrations of > 0.72%). Buildings used for commercial servicing and maintenance of equipment from commercial nuclear reactors contain residual amounts of byproduct material contamination.

From the mid-1950s to the early 1960s, certain buildings and areas of the site were used in support of the U.S. Government's Naval nuclear programs under the Atomic Energy Commission. Site areas impacted by these programs also have residual uranium contamination, but can be distinguished from NRC licensed radioactive materials because the uranium is highly enriched in the isotope of U-235 (> 20%). In accordance with the Memorandum of Understanding (MOU) between the NRC and the U.S. Army Corps of Engineers (USACE), the USACE is responsible for remediating these areas under the Formerly Utilized Sites Remedial Action Program (FUSRAP). In accordance with the MOU, FUSRAP areas do not fall under NRC jurisdiction. However, once FUSRAP areas have been remediated in accordance with a Record of Decision being prepared by the USACE under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), ABB Prospects, Inc. must demonstrate to the NRC that the entire site meets the criteria for unrestricted release in accordance with Subpart E of 10 CFR Part 20.

NRC License 06-00217-06 was issued in the early 1960s, renewed in 1968, and has been amended periodically since that time. NRC-licensed activities performed at the Windsor, CT site involved research, development, engineering, fuel assembly, and servicing of nuclear systems and fuel. The DP provides a comprehensive plan for site radiological remediation to meet NRC criteria in 10 CFR 20, Subpart E, "Radiological Criteria for License Termination." The DP identifies radiologically impacted and potentially radiologically impacted areas including building foundations and grounds, drain lines, liquid waste processing facilities, and waste storage areas. ABB Prospects, Inc.'s historical site assessment, site characterization survey, and radiological surveys performed during routine operations indicate that there is residual contamination on facility structures, systems and components that is primarily the result of the deposition of uranium including U-234, U-235, and U-238, and also includes some byproduct materials including Cobalt-60 and Cesium-137 that resulted from commercial services work. Approximately one-third of the 600 acres of site property, or approximately 200 - 250 acres, are considered to be impacted or potentially impacted. Based upon characterization surveys, approximately 5 acres of total land areas will actually require remediation.

Commercial fuel research, development, and assembly ceased in April 2000, when ABB CE sold their worldwide nuclear power business to Westinghouse. Westinghouse continued to service contaminated reactor components at the CE Windsor site until August 2001, at which time ABB Prospects, Inc. initiated preparations and plans for site decommissioning.

## 1.2 Need for the Proposed Action

The proposed action is necessary to allow ABB Prospects, Inc. to remove radioactive material attributable to licensed operations at the site, to levels that permit unrestricted use of the site. NRC regulations require licensees to begin timely decommissioning of their sites, or any separate buildings that contain residual radioactivity, upon cessation of licensed operational activities, in accordance with 10 CFR 30.36(d). The licensee has requested the proposed action because they no longer plan to conduct licensed activities at this facility and expect to return the property to beneficial reuse. The proposed licensing action will support this goal. NRC is fulfilling its responsibilities under the Atomic Energy Act and the National Environmental Policy Act to make a decision on a proposed license amendment for decommissioning that ensures protection of the public health and safety and the environment.

### **1.3 The Proposed Action**

The objective of ABB Prospects, Inc. is to decontaminate and decommission the CE Windsor, CT facilities to permit release for unrestricted use and termination of NRC license 06-00217-06. ABB Prospects, Inc. was previously authorized by NRC License No. 06-00217-06, Amendment 53, to de-construct the above grade structures of complexes 2, 5, & 17. Approval of the DP will allow removal of building slabs and foundations of building complexes 2, 5, & 17; decontamination and removal of building 6A; excavation and removal of affected drains and utilities; excavation and removal of contaminated soil; and restoration of excavated areas with clean overburden. Soil and other radioactively contaminated materials will be transported to an NRC-approved interim storage or disposal facility.

Radiological wastewater from Buildings 5 and 17 was processed in Building 6A, and there were potential leaks in radiological waste pipelines between Buildings 5 and 6A, 17 and 6A, and 6 and 6A. Subsurface soils between these buildings may have contamination along certain areas of the waste pipelines. Impacted drain lines will be excavated and removed. Excavations and below ground structures that have been determined to meet release criteria will be backfilled. Soil and debris exceeding established DCGLs will be collected, packaged for disposal, and shipped to a licensed low level waste disposal facility. Following waste disposal, site restoration will be implemented and final status surveys and sampling will be performed. The decommissioning effort will complete remediation of the Windsor site and demonstrate compliance with unrestricted release guidelines described in 10 CFR 20, Subpart E, "Radiological Criteria for License Termination." In addition, ABB Prospects, Inc. agreed with the Connecticut Department of Environmental Protection to further reduce residual radioactivity that is distinguishable from background radiation to levels that would result in a total effective dose equivalent to a resident farmer of no more than 19 millirem per year. Based on this criteria, ABB Prospects, Inc. calculated DCGLs for total uranium and cobalt-60. The DCGL for total uranium in soil was calculated to be 557 pCi/g. The DCGL for Co-60 was calculated to be 5.0 pCi/g. In addition, ABB Prospects, Inc. will remediate any surface contamination (on equipment and structures) within the NRC limits specified for unrestricted release in NRC Regulatory Guide 1.86.

Decontamination and decommissioning activities have the potential to release radiological contaminants into the air, soils, and water. The DP includes mitigative measures to prevent significant environmental effects including dust suppression, erosion control, and storm water management. No effluent releases are planned during decommissioning activities. However, if effluent releases should occur (e.g., collected waste water released to the site brook), then procedures and process controls will be used to ensure that adequate sampling and monitoring of effluents are performed, and effluent releases meet the criteria in 10 CFR 20, Appendix B.

The majority of NRC-authorized decommissioning work including building remediation and dismantlement, drain line excavation, and surveys are scheduled to occur from mid 2004 to early 2006. FUSRAP activities are projected to be performed from early 2005 - early 2007. Site wide final status surveys are projected to occur in 2007.

NRC staff reviewed the information provided by ABB Prospects, Inc., describing the proposed decommissioning actions and requested additional information regarding specific areas that needed clarification. On March 26, 2004, ABB Prospects, Inc., submitted a response to NRC's Request for Additional Information (RAI). Based on this information, NRC staff concluded that the October 15, 2003 DP, plus subsequent information provided by ABB Prospects, Inc. on March 26, 2004, provide an adequate information base for assessing potential environmental impacts from the proposed action. Cleanup of the Windsor site is expected to mitigate potential future environmental impacts attributable to existing radiological contamination resulting from past operations at the site. Decommissioning the facility for unrestricted release also frees the land for future productive use.

## **2.0 ALTERNATIVES TO THE PROPOSED ACTION AND ENVIRONMENTAL IMPACTS**

Two alternatives to the proposed action are considered. The first alternative is no action. No action by ABB Prospects, Inc. would constitute a violation of 10 CFR 40.42(d) requirements, which require licensees to begin remediating site buildings and outdoor areas that contain residual radioactivity after permanently ceasing principle activities. Impacts of the no-action alternative are maintaining an NRC license, which would significantly reduce options for future property use, and require perpetual care and security for the site in its current radiological condition to prevent radiation exposure and unauthorized public access. Maintaining the areas under a license would impose an unnecessary regulatory burden. The effect of the no-action alternative would be to restrict potential benefits from future uses of the site.

The second alternative involves decommissioning and on-site storage of debris and excavated soils for an indefinite period of time. While on-site storage defers the cost associated with disposal at a license facility, it does not account for potential inflation in disposal costs, and it removes the property from productive use resulting in a negative impact to the local economy. On-site storage of wastes also requires continued implementation of a radiological access control and monitoring program to ensure protection of public health.

## **3.0 AFFECTED ENVIRONMENT**

The CE Windsor facility is located in the town of Windsor, CT, eight miles north of Hartford, CT. The site consists of approximately 600 acres and is bordered by the Rainbow Reservoir portion of the Farmington River.

The CE Windsor Site is industrially zoned by the Town of Windsor, and is located in a mixed land use area of Hartford County. An estimated 56,000 people live within a 5 mile radius of the site. Nearby land uses are primarily commercial, agricultural, industrial, and residential. Much of the northern and western portions of the property are wooded.

The site is bordered by Day Hill Road and agricultural and commercial land to the south; tobacco fields and sand and gravel quarry to the west; the Windsor/Bloomfield Sanitary Landfill and Recycling Center (Landfill) to the north; and forested land as well as residential and commercial

developments to the east. Within the property is a 10.6 acre enclave formerly owned by CE until 1960, known as S1C. This area is currently owned by the United States Government and is referred to as the former Knolls Atomic Power Laboratory (KAPL). Structures on this site have been demolished and the property has been decommissioned by the U.S. Department of Energy in accordance with their cleanup guidelines.

Several surface water bodies are located on or adjacent to the CE Windsor site. The Farmington River flows along the northern boundary of the site, and Site Brook and Goodwin Pond are located within the northern portion of the site. Site Brook flows northwest from the Goodwin Pond, a man-made reservoir, to the Farmington River. Small Pond in the southeast portion of the site was originally formed by a beaver dam in the mid-to late-1960s and later reconstructed with a permanent dam to form a reservoir in the early 1970's. Small Pond drains into an unnamed brook that discharges into Goodwin Pond. Great Pond, the largest surface water body within the site, is located in the southwest portion of the facility. It is a glacial kettle-hole pond with no natural inlet or outlet. Great Pond received surface water drainage during commercial operations, and it maintains its water levels through interaction with groundwater. Site Brook, Goodwin Pond, and Small Pond all receive some surface water drainage or surface runoff.

Approximately one-third of the property is developed with buildings, infrastructure, and maintained landscaping. The remaining two-thirds of the property is wooded, and may or may not have been disturbed by historic operations performed by either CE or previous owners. Parts of the wooded areas are known to have been excavated for fill, used to stage drums, and used as a historic non-radiological disposal area.

The highest portion of the site is approximately 210 feet above mean sea level, and the site drops down to about 98 feet along the banks of the Farmington River.

The nearest residence is located approximately 500 feet from the site. The majority of citizens in the area are served by the Metropolitan District Commission public water supply. A public water supply well is located in East Granby Village located 1.8 miles from the site, and some properties on Prospect Hill Road and Huckleberry Road are assumed to use private wells.

It is anticipated that future uses of the site will be roughly consistent with its current use (commercial, light industrial uses). The current land use in the surrounding areas is a mixture of commercial, light industrial, warehousing, office park, residential, municipal landfill, and commercial farming. Area land use is trending toward commercial and industrial and it is unlikely that the land will be used for farming or residential use in the foreseeable future.

## **4.0 ENVIRONMENTAL IMPACTS**

Site decommissioning activities have the potential to spread residual radiological contamination to soils, surface and ground water, and through the air. Impacted populations include site workers, members of the public in the local community, and members of public adjacent to transport highways. Decommissioning activities also present non-radiological impacts including temporary increases in vehicular traffic, noise, degraded scenic quality, and increased risk of industrial safety accidents.

### **4.1 Radiological Impacts to Workers From Planned Decommissioning Activities**

Site workers could be exposed to radiation and radiological contamination during demolition of buildings and foundations, excavation of soils and contaminated drain lines, and handling, packaging, and shipment of radioactive wastes. The primary component of residual radiological contamination encountered during decommissioning will be uranium. The majority of radiation energy emitted from uranium isotopes is non-penetrating alpha radiation. Accordingly, direct whole body radiation levels and personnel doses associated with residual contamination are expected to be low. The primary hazard to site workers will come from direct exposure to the whole body or skin, and inhalation or ingestion of residual contamination. ABB Prospects, Inc.'s "Derivation of Site Specific Soil DCGLs," dated September 2003, used the RESRAD Version 6.0 computer code to model various worker exposure scenarios. ABB Prospects, Inc. concluded that among the various groups of construction workers that might be exposed to radiation, the earth workers are the critical group and have the greatest potential for exposure because of the combination of the contact-intensive nature of their tasks and the relatively longer exposure duration. The construction worker scenario assumes workers spend 8-hours per day on site soil for a six-month period (1000 hours), with no allowances for weather, sickness, vacation, or interruptions. ABB Prospects, Inc.'s calculated that construction workers could receive a dose of 25 mrem, if they were to work in soil with an average uniform concentration of 6,079 pCi/g for 3.5% enriched uranium or 31.3 pCi/g of cobalt-60. Soil characterization data indicates that average uranium concentrations in soil are less than approximately 6 pCi uranium per gram and less than 1 pCi Cobalt-60 per gram. The maximum concentration of total uranium found in waste lines was approximately 23,000 pCi uranium per gram. Materials within the waste lines will generally be wet and steps will be taken to contain the materials and prevent them from going airborne. Radiological contamination controls will be required for personnel involved in cutting, handling, and packaging of contaminated drain lines to limit skin and airborne exposures. In addition, although unlikely, drain lines with elevated concentrations of uranium contamination, if mishandled, theoretically have the potential for nuclear criticality. Specific procedural controls for sampling and handling are included in procedures and will be implemented to ensure worker safety. Based on characterization surveys, operational experience, and implementation of planned controls, radiation doses to site workers are expected to be on the order of less than 10 mrem and well below the NRC 10 CFR 20 occupational dose limit of 5 rem (5,000 millirem) per year. Because estimated doses are well below this limit, no significant radiological impacts to site workers are expected.

#### **4.2 Radiological Impacts to Members of the Public From Planned Decommissioning Activities**

Potential radiological impacts to the public from routine decommissioning operations at the ABB Prospects, Inc. Windsor facility are limited to similar release mechanisms pertaining to worker exposures including exposure to contaminated dusts and liquid effluents, but require transport over greater distances to reach potential receptors. Therefore, much lower concentrations and doses are expected for members of the public in comparison to workers. The DP includes mitigative measures to prevent significant environmental effects including dust suppression, erosion control, and storm water management. No effluent releases are planned during decommissioning activities. However, if effluent releases should occur (e.g., collected waste water released to the site brook), then procedures and process controls will be used to ensure that adequate sampling and monitoring of effluents are performed, and effluent releases meet the criteria in 10 CFR 20, Appendix B, prior to release. ABB Prospects has estimated that doses associated with radioactive material in effluents would be maintained at less than 10 percent of the applicable public dose limits in 10 CFR 20, providing confidence that the potential for adverse environmental impacts is low. There is no potential pathway for public exposure from groundwater. The NRC concludes that ABB Prospects, Inc. has provided adequate plans to ensure that potential radiological impacts to members of the public from the proposed action will not exceed NRC limits and are unlikely to result in adverse environmental impacts.

#### **4.3 Radiological Impacts to Workers and Members of the Public From Transportation of Low-Level Waste**

The decommissioning effort will generate radiologically-impacted construction debris and contaminated soil which will be packaged in both B-25 and inter-modal containers. The building dismantlement will generate approximately four truckloads of B-25 containers of radiologically impacted building materials during a six month period. The B-25 containers will be transported on flat bed trucks, approximately 11.4 miles from the CE Windsor Site, where they will be transferred onto rail cars.

The building dismantlement will generate approximately 30 intermodal containers of radiologically-impacted construction debris during the six month period. Each container will be loaded onto one truck. The inter-modal containers will be transported by truck, approximately 13 miles from the CE Windsor Site, where they will be loaded onto rail.

All radiologically-impacted waste materials (B-25 containers and inter-modal containers) will be transported by rail approximately 2,360 miles to Envirocare's Clive, Utah facility for disposal.

As previously indicated, the majority of residual radioactive contamination at the site is uranium. The majority of radiation energy emitted from uranium isotopes is non-penetrating alpha radiation. Due to elevated densities, waste containers of contaminated building rubble and soil are essentially self shielding and will emit very low radiation levels.

The risk to human health from the transportation of all radioactive material in the U.S. was evaluated in NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes" (NRC, 1977). The principle radiological environmental impact during normal transportation is direct radiation exposure to nearby persons from radioactive

material in the package. The average annual individual dose from all radioactive material transportation in the U.S. was calculated to be approximately 0.5 mrem, well below the 10 CFR 20.1301 limit of 100 mrem for a member of the public.

Because of higher exposure times and close proximity, the most significant dose impact would be an occupational dose to the drivers of radioactive waste shipments. Based on expected dose rates, travel times, and proximity of the driver to the radioactive waste, radiation doses to drivers of the low-level radioactive waste shipments are expected to be well below NRC occupational dose limits in 10 CFR 20. Therefore, ABB Prospect, Inc. has provided an adequate basis for concluding that planned decommissioning activities are unlikely to result in adverse radiological impacts to workers and members of the public from transportation of low-level radioactive waste.

Accordingly, packaged radioactive wastes from the Windsor site will have very low external radiation dose rates and will be a small fraction of Department of Transportation dose limits. Therefore, the public is not expected to be significantly impacted by the transportation of low-level waste shipments from the Windsor site.

#### **4.4 Non-radiological Impacts**

Potential non-radiological environmental impacts include increased traffic, increased noise due to building demolition and construction traffic, degraded scenic quality during building demolition and soil excavation, and increased potential for industrial safety accidents. Several buildings will require asbestos abatement prior to demolition. ABB Prospects, Inc. has experience with asbestos abatement and plans to perform the abatement according to state and federal regulations.

Non-radiologically impacted wastes will be disposed off-site as demolition debris at approved off-site locations. Approximately 1-2 truckloads per day of demolition debris are anticipated on average during building demolition and this should last approximately 6 months. Following disposal of building debris, non-radiological demolition debris should drop-off to 1-2 truckloads per week. Truckloads of the industrial wastes will travel along Day Hill Road to I-91 to their intended destinations. Traffic along Day Hill Road has been estimated at approximately 10,900 vehicles per day. Peak decommissioning activities could add several hundred additional personal vehicles per day from site workers. The decommissioning effort is likely to add one to four trucks per day to Day Hill Road and other transport routes.

There are no planned direct uses of chemicals in the proposed action, only the excavation of soil, demolition of buildings, removal of concrete, and removal of contaminated waste drain lines that potentially could exceed the radiological criteria for unrestricted release. Complete characterization and management of such wastes will serve to limit any non-radiological impacts, if present. Therefore, NRC concludes that ABB Prospects, Inc. has an acceptable plan for controlling potential releases of non-radiological hazardous materials.

#### **4.5 Cumulative Impacts**

The NRC has evaluated whether cumulative environmental impacts could result from an incremental impact of the proposed action when added to the other past, present, or reasonably foreseeable future actions in the area. NRC approval of the proposed license amendment, when combined with the known effects on resource areas at the site, including future site remediation, are not anticipated to result in any cumulative impacts at the site.

#### **4.6 Mitigation Measures**

Section 11 of ABB Prospects, Inc.'s DP describes the decommissioning "Environmental Monitoring and Control Program" that will be employed during the decommissioning project. The project goals are to use process and engineering controls to maintain environmental releases to levels that are "as low as is reasonably achievable" (ALARA) and less than or equal to 20% of the allowable regulatory release limits in 10 CFR 20 Appendix B.

Procedural controls, such as use of less aggressive decontamination or demolition techniques, will be used to minimize generation of fugitive emissions. Engineering controls, such as water spray or filtration will also be used to control and minimize dust and airborne activity generation.

Structural features such as use of barriers, dams, erosion control blankets, sediment barriers, and channeling demolition area water runoff through vegetated areas will be used to minimize sediment migration.

Estimated volumes of low level radioactive waste generated during decommissioning include 13,000 ft<sup>3</sup> of building rubble, 149,000 ft<sup>3</sup> of soil, and 1,100 ft<sup>3</sup> of miscellaneous waste. Low level radioactive waste generated during decommissioning will be segregated from other wastes, characterized, containerized, and shipped by truck or rail to a licensed low level waste disposal facility. All radioactive waste shipments will be required to be made in accordance with procedural controls and Department of Transportation and Nuclear Regulatory Commission regulations. During the proposed decommissioning effort, traffic on local roads and highways is expected to increase. However, to the extent practicable, the number of waste packages and waste shipments will be minimized.

During decommissioning, the Site Health, Safety & Radiation Safety Officer will be principally responsible for radiological health and safety, and regulatory compliance. Radiation Work Permits (RWPs) will be used to implement radiological controls during remediation activities. Radiation, contamination, and airborne radioactivity surveys will be performed to monitor potential migration of radioactive material and assess personnel dose. A strict inventory control protocol will be employed during remediation of facility drain lines to eliminate the possibility of nuclear criticality.

ABB Prospects, Inc. will establish a site Health and Safety Plan to implement, monitor, and maintain an industrial safety program in order to protect workers during the decommissioning effort. Activities that generate excessive noise will be identified and monitored. Workers will be protected through work planning and scheduling and use of personal protective equipment. Engineered noise barriers will be used as necessary to reduce noise at site boundaries.

Overall scenic quality at the site is not expected to be significantly impacted because the buildings scheduled for demolition and the planned locations for staging debris piles are not adjacent to public roads. Once building structures are removed, excavated areas will be backfilled, graded, and re-vegetated resulting in an improvement in the scenic quality at the site.

Site decommissioning activities are expected to temporarily (several years) add some jobs to the local economy and eventually allow the site to be returned to beneficial reuse.

Based on this review, the staff has determined that ABB Prospects, Inc.'s plans for site decommissioning include appropriate controls and mitigative measures and there will be no significant environmental impacts associated with implementation of the DP.

#### **4.7 Monitoring**

ABB Prospects, Inc. has committed to conduct decontamination and deconstruction activities in a manner that protects the health and safety of the public, site workers, and the environment. This includes development of programs and procedures that provide for monitoring and detection, and control of releases of radioactive material into the environment.

During decommissioning, ABB Prospects, Inc. plans to continue to implement the environmental monitoring program referenced in Section 10.2 of their license application. The program examines uranium content and accountability, appropriate storage, alpha and beta radioactivity in surface and well waters, river sediment, soil, vegetation, and atmospheric fallout. Analytical gamma spectroscopy is routinely performed on river sediment, and onsite soil and vegetation. Monitoring locations and frequency are described in operational procedures.

During decommissioning activities, storm water will be collected from one or more boundary locations of decommissioning areas depending on activities. Air sampling will be performed at or near the boundary of decommissioning activities. Contamination monitoring will be performed at controlled access boundaries. Radiological Control personnel will routinely perform inspections to assess potential migration of materials via sediment, water, or airborne pathways.

ABB has installed about 135 groundwater monitoring wells for their Resource Conservation and Recovery Act, Voluntary Corrective Action Program. ABB currently samples 70 monitoring wells and seven well points in the Site Brook on a quarterly basis for their Radiological Groundwater Sampling Program (five of the monitoring wells are background wells).

#### **5.0 AGENCIES AND PERSONS CONSULTED**

NRC staff prepared this EA with input from the U.S. Fish and Wildlife Service, Connecticut's Historical Commission, and the State of Connecticut's Department of Environmental Protection.

By letter dated April 13, 2004, the U.S. Fish and Wildlife Service indicated that on the basis of current information, no current federally identified or proposed threatened or endangered species under U.S. Fish and Wildlife Service jurisdiction are known to occur in the site project area. The federally-endangered dwarf wedgemussel (*Alasmodonta heterodon*) is known to exist in the Farmington River, and as long as project work does not extend into the Farmington River and there are no discharges into the river, no impacts to federally listed species will occur.

By letter dated August 19, 2002, the State Historic Preservation Office, stated that Buildings 1 and 2 demonstrate architectural uniqueness, retain their essential functional characteristics, and possess historic significance with respect to commercial and military-related nuclear research and development. However, the Office agreed with ABB Prospects, that there was no feasible and prudent alternative to facilitate retention of the building and concurred with ABB Prospects, Inc.'s decision to demolish the building, provided that ABB conducted mitigative measures to document, preserve, and disseminate records of historical significance. On January 22, 2003, the State of Connecticut's Historical Commission endorsed ABB Prospects, Inc.'s proposed site mitigative measures. By letter dated March 22, 2004, Connecticut's Historical Commission offered no objections to ABB Prospects, Inc.'s license amendment request.

On April 13, 2004, NRC provided a draft of its Environmental Assessment to the State of Connecticut, Department of Environmental Protection (CTDEP) for review. On May 13, 2004, CTDEP responded by e-mail letter agreeing with the conclusions of the EA with minor comments. On May 13, 2004, the EA was revised to reflect the State's comments where appropriate.

## **6.0 CONCLUSION**

NRC concludes that the approval of the license amendment will not cause any significant impacts to the human environment and is protective of human health, and that exposures to workers will be well below the limits specified in 10 CFR 20. Dismantlement and deconstruction of building slabs and remediation of soils will result in a reduction of radioactive material at the ABB site in Windsor, CT, which will reduce the long term potential for release of radiological contamination to the environment. No radiologically contaminated effluents are expected during site decommissioning. Surface and ground water are not expected to be impacted during decommissioning, and remediation of soils should further reduce radionuclide concentrations. No measurable radiation exposure to a member of the public is expected, and public exposures will therefore be less than the applicable public exposure limits in 10 CFR 20. The NRC determined that the proposed action is more favorable than either the no-action or on-site storage alternatives. The proposed action is the remediation of radioactive material at the facility to levels that will permit unrestricted use of the site and termination of the license. The NRC staff has prepared this EA in support of the proposed action to amend License No. 06-00217-06. On the basis of the EA, NRC has concluded that there are no significant environmental impacts and the license amendment does not warrant the preparation of an Environmental Impact Statement. Accordingly, it has been determined that a Finding of No Significant Impact is appropriate.

## **7.0 LIST OF PREPARERS**

This Environmental Assessment was prepared by the following NRC staff:

Randolph C. Ragland, Jr., Project Manager, Decommissioning and Laboratory Branch, Division of Nuclear Materials Safety, NRC Region I.

Craig Z. Gordon, Senior Health Physicist, Decommissioning Branch, Division of Nuclear Material Safety, NRC Region I

Amir A. Kouhestani, Technical Project Manager, Decommissioning Branch, Division of Waste Management, Office of Nuclear Material and Safety and Safeguards.

Jon M. Peckenpaugh, Hydrologist, Environmental and Performance Assessment Branch, Division of Waste Management, Office of Nuclear Material and Safety and Safeguards.

Richard B. Codell, Hydrologist, Environmental and Performance Assessment Branch, Division of Waste Management, Office of Nuclear Material and Safety and Safeguards.

## 8.0 LIST OF ACRONYMS

ALARA	As Low As Is Reasonably Achievable
AEC	Atomic Energy Act
CE	Combustion Engineering
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CTDEP	Connecticut Department of Environmental Protection
DOT	Department of Transportation
DP	Decommissioning Plan
DCGL	Derived Concentration Guideline Level
EA	Environmental Assessment
FRN	Federal Register Notice
FUSRAP	Formerly Utilized Sites Remedial Action Program (FUSRAP)
MOU	Memorandum of Understanding
NRC	Nuclear Regulatory Commission
NEPA	National Environmental Policy Act
U	Uranium

## 9.0 LIST OF REFERENCES

- 1 The licensee's October 15, 2003, license amendment request was noticed in the *Federal Register* on February 6, 2004 (69 FR 5879). This *Federal Register* notice also provided an opportunity for a hearing on this licensing action. ML040300180
- 2 The application for the license renewal and supporting documentation are available for inspection at NRC's Public Electronic Reading Room at <http://www.nrc.gov/NRC/ADAMS/index.html>. Accession Number: ML040300149.
3. Title 10 Code of Federal Regulations, Part 20, Subpart E, "Radiological Criteria for License Termination."
4. Title 10, Code of Federal Regulations, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."
5. NUREG -0170, 1977. Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes, U.S. Nuclear Regulatory Commission, Washington, D.C.

6. NUREG-0586, 1988. Final Generic Environmental Impact Statement on the Decommissioning of Nuclear Facilities, U.S. Nuclear Regulatory Commission, Washington, D.C.
7. NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities" NRC: Washington, D.C. July 1997.
8. NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, Draft Report for Interim Use and Comment" NRC: Washington, D.C. September 2001
9. NRC License No. 06-00217-06 inspection and licensing records.
10. NUREG-1757, "Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees." U.S. Nuclear Regulatory Commission: Washington, D.C. September 2003
11. July 24, 2003, Memorandum from Lawrence E. Kokajko, NRC to George Pangburn, NRC, RE: Acceptance Review of ABB Prospects, Incorporated's Decommissioning Plan for the Windsor, CT Site. ML030790365
12. January 12, 2004, Memorandum from Lawrence Kokajko, NRC to George Pangburn, NRC, RE: Approval of Decontamination Concentration Guideline Levels for Windsor-CE (ABB Prospects) Site, Windsor, CT, TAR 8351 Region I. ML040130415
13. February 12, 2004, Memorandum from Claudia Craig, NRC to Ronald Bellamy, NRC, RE: Review of ABB Prospects Response to Request for Additional Information Regarding 2003 Decommissioning Funding Plan. ML040430232
14. March 29, 2004, Memorandum from Scott C. Flanders, NRC to George Pangburn, NRC, RE: Approval of Groundwater and Surface Water Sections in ABB Prospects, Incorporated's decommissioning Plan for the Windsor Site, TAR 8352 Region I.
15. August 22, 2002, Memorandum from John W. Shannahan, Connecticut, State Historic Preservation Office, to Dr. Ronald R. Bellamy, RE: ABB/Combustion Engineering Proposed Building Demolition. ML022410108
16. March 22, 2004, Letter from J. Paul Loether, Connecticut, State Historic Preservation Office, to Dr. Ronald R. Bellamy, RE: ABB/Combustion Engineering, Windsor, CT, License Amendment Request. ML040980640
17. March 26, 2004, Letter from John Conant, ABB Prospects, Inc., to Randolph Ragland, NRC, RE: Response to RAI [Request for Additional Information Regarding the October 15, 2003, Decommissioning Plan] ML041200209
18. April 13, 2004, Letter from Michael J. Amaral, U.S. Fish and Wildlife Service, to Ronald R. Bellamy, RE: Bldg. Deconstruction, Subsurface Remediation, ABB Prospects, Inc., Windsor, CT. ML041340679

19. May 13, 2004, E-mail from Michael Firsick, CT Department of Environmental Protection, to Randolph Ragland, NRC, RE: State of CT Review of NRC's Environmental Assessment of the Decommissioning of the CE Windsor site in Windsor, CT. ML041400528

The application for the license amendment and supporting documentation are available for inspection at NRC's Public Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. Any questions with respect to this action should be referred to Randolph C. Ragland, Jr., Decommissioning Branch, Division of Nuclear Materials Safety, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406, telephone (610) 337-5083, fax (610) 337-5269.

Dated at King of Prussia, Pennsylvania this 20<sup>th</sup> day of May, 2004

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Marie T. Miller, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety  
Region I

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