



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

**PUBLIC MEETING
ON
ABB INC. WINDSOR SITE**

**WINDSOR TOWN HALL
WINDSOR, CT
WEDNESDAY, MARCH 25, 2009**



NRC Participants

- **Randolph Ragland**, Chief, Decommissioning Branch, NRC Region I
- **Jim Schmidt**, Project Manager & Lead Inspector, NRC Region I
- **Lydia Chang**, Chief, Special Projects Branch, Division of Waste Management and Environmental Protection, Headquarters

AGENDA

- 7:00 p.m. Welcome & Introductory Remarks Randolph Ragland, NRC-RI
- 7:10 p.m. Decommissioning Process Overview Randolph Ragland, NRC RI
- 7:30 p.m. NRC Activities at Windsor Jim Schmidt, NRC-RI
 - Background
 - Partial Site Release and Future Activities
- 8:00 p.m. Governmental Stakeholder Comments
 - Town of Windsor
 - State of Connecticut
- 8:15 p.m. Questions & Answers All
- 8:55 p.m. NRC Closing Remarks Randolph Ragland, NRC RI
- 9:00 p.m. Adjourn



NRC Mission

To regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.



How We Regulate Decommissioning

- Regulations and Guidance
 - 10 CFR 20 Subpart E
 - NUREG-1757: Consolidated Decommissioning Guidance
- Research
- Inspection and Enforcement
- Reviewing & Approving DP (Licensing)
- Developing Environmental Assessments & Environmental Impact Statements
- Reviewing & Approving Final Status Surveys
- Confirmatory Surveys



Roles & Responsibilities of NRC at ABB

- Headquarters
 - Policy/Program Management
 - Dose assessments
 - Detailed Technical Reviews
- Region I
 - Project Management
 - Inspections
 - Enforcement



Public Involvement in Decommissioning

- Public involvement is a cornerstone of strong, fair regulation of nuclear facilities decommissioning
- Public is invited to comment on decommissioning process and proposed regulations and to observe and participate in certain meetings.



Public Involvement & Community Outreach

- **Public Meetings**
- **Publicly-Noticed Meetings with the Licensee**
- **Workshops**
- **Informal Contacts with NRC Staff (Telephone Calls, E-Mails)**
- **Press Releases**
- **Federal Register Notices**
- **NRC Web Site - [http://www.nrc.gov/public outreach](http://www.nrc.gov/public_outreach)**



Formal Opportunities for Public Involvement

- **10 CFR 20.1405 Public Notification and Public Participation in Decommissioning**
- **Upon receipt of DP or licensee proposal to release site, NRC will notify and solicit comments**
 - Local & State governments
 - Publish a notice in the Federal Register, local news paper, etc. and solicit comments
- **Hearing Opportunities on License Amendments (10 CFR 2 - Subpart L) (e.g., DP Approval, License Termination)**
- **10 CFR 2.206 Petition to modify, suspend, or revoke a license**
- **Freedom of Information Act Requests**
- **Allegations**



Decommissioning Process Overview

Randolph C. Ragland, Jr., Chief
Decommissioning Branch, Division of Nuclear Materials Safety
Region I
U.S. Nuclear Regulatory Commission



Decommissioning Process Overview

- Licensee notifies NRC after permanently ceasing licensed activities
- 12 months to submit a Decommissioning Plan (DP) (alternate schedule may be granted)
- NRC reviews DP
- Decommissioning must meet site termination criteria
(10 CFR 20 Subpart E)
- NRC Approves Decommissioning Plan



License Termination Standards for Unrestricted Release (10 CFR 20.1402)

- **Total Effective Dose Equivalent (TEDE)(25 millirem/year) and is As Low As Reasonably Achievable (ALARA)**
- **Average member of the critical group**
- **All pathways**
- **Determine peak annual dose within 1000 years**

Decommissioning Plan: NUREG 1757

- **Site Characterization**
 - **Site Description**
 - **Facility Operating History**
 - **Radiological Status**

Decommissioning Plan: NUREG 1757

- Program Organization
 - Planned Decommissioning Activities
 - Project Management & Organization
 - Radiation Safety & Health Program
 - Environmental Monitoring & Control
 - Radioactive Waste Management
 - Quality Assurance Program
- Process for making changes to the DP



NUREG-1757 Consolidated Decommissioning Guidance

- **Volume 2: Characterization, Survey, and Determination of Radiological Criteria**
 - **Methods for demonstrating Compliance with dose criteria**
 - **Final Status Surveys**
- **Volume 3: Financial Assurance, Record Keeping, and Timeliness**

Decommissioning Plan Review

- **Submittal of proposed DP**
- **Acceptance review**
- **Technical review**
- **Additional information requested, if necessary**
- **Licensee responds to NRC's questions**
- **Approval of DP via license amendment**

Activities Following DP Approval

- **Site remediation**
- **Regulatory oversight (inspections, license amendments, in-process surveys)**
- **Coordination with the State**
- **Final Status Survey Report (FSSR)**
- **Confirmatory surveys as necessary**
- **License termination**



NRC Activities at Windsor

Jim Schmidt, Health Physicist
ABB Windsor Project Manager
Decommissioning Branch, Division of Nuclear Materials Safety
Region I
U.S. Nuclear Regulatory Commission



ABB Site Decommissioning - Background

- **1956-1961: Research and development (R&D) and manufacture of naval nuclear fuel**
- **1959-1993: Operation of the S1C submarine reactor prototype used for training naval nuclear plant operators**
- **1961-2000: R&D, component services, and manufacture of fuel for commercial nuclear customers**
- **2001: End of active operations involving radioactive materials**
- **Radioactive material use impacted roughly about 46 acres of the 612 acre Windsor site. Materials use did not impact groundwater.**



ABB Site Decommissioning - Background

Three types of areas involved in site decommissioning:

- **NRC-licensed areas** - remediated and surveyed by ABB with final approval for release granted by NRC. These are areas associated with commercial fuel activities.
- **Formally Utilized Sites Remedial Action Program (FUSRAP) areas** - normally remediated, surveyed and release granted by the U.S. Army Corps of Engineers (USACE). These are areas associated with naval fuel.
- **S1C** - remediated, surveyed and release granted by Naval Reactors/Department of Energy.

ABB Site Decommissioning – Site Layout

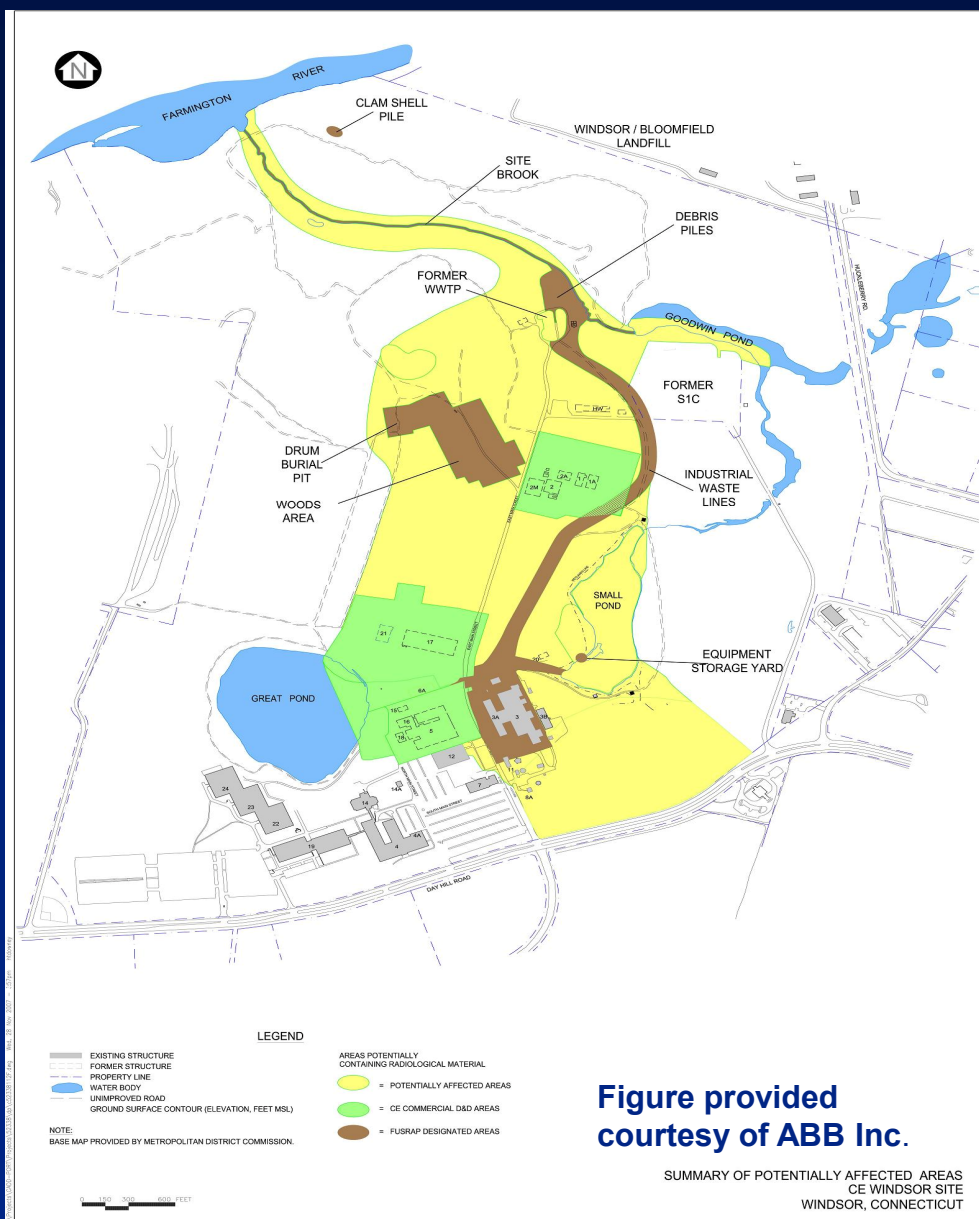


ABB Site Decommissioning – S1C

- **Naval Reactors and the Department of Energy remediated, surveyed, and released the 11 acre S1C plot in October 2006.**

ABB Site Decommissioning – NRC Areas

- **October 2003 – Site Decommissioning Plan (DP) for NRC – licensed areas submitted to the NRC.**
- **January 2004 – Site specific derived concentration guideline levels (DCGLs) submitted by ABB and approved for use by NRC and the State of Connecticut. The DCGLS were applicable to the entire site.**
- **June 2004 - ABB DP for remediation of NRC-licensed areas was approved and incorporated into the ABB NRC License. Windsor site remediation began.**
- **April 2007 – ABB completed NRC-licensed area remediation and submitted final status surveys (FSSs) of remediated footprints for Buildings 2, 5 and 17.**

- Building 2 Complex Before and After Decommissioning (photos provided by ABB Inc.)



ABB Site Decommissioning – NRC Areas (cont.)

- December 2007 – ABB requested that release be granted for 365 acres of the site. This request included portions of the NRC-licensed areas.
- March through September 2008 – NRC conducted confirmatory surveys and reviewed ABB FSSs. The Connecticut Department of Environmental Protection (CTDEP) also conducted confirmatory surveys.
- January 2009 – 365 acres of the 612 acre site released for unrestricted use. License amended to reflect this change.

Partial Site Release Area

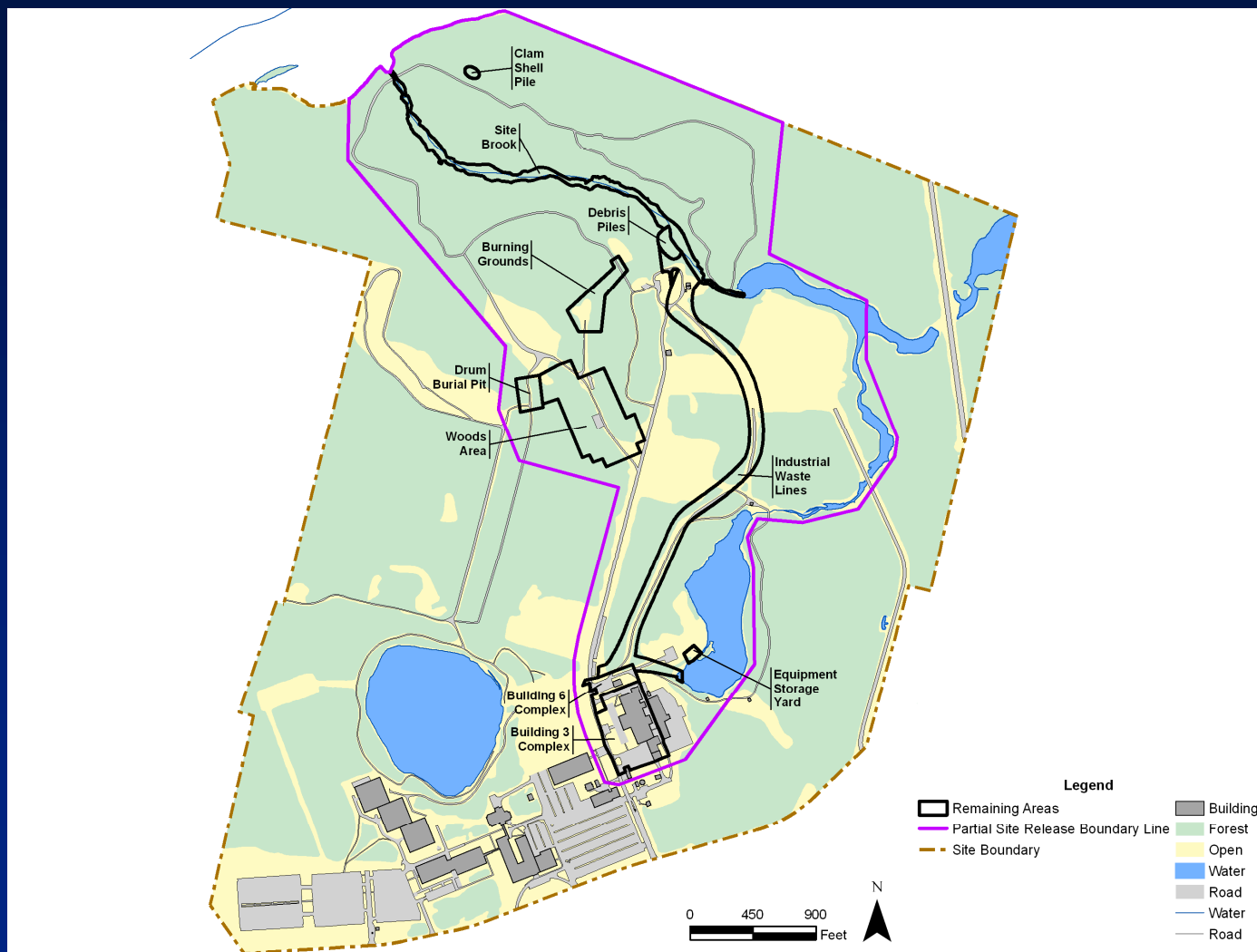


Figure provided courtesy of ABB Inc.

ABB Site Decommissioning – FUSRAP Areas

- **August 2007 - US Army Corps of Engineers (USACE) submitted a proposal to allow ABB to remediate FUSRAP areas under the jurisdiction of the NRC license; NRC concurred with the USACE proposal.**
- **September 2007**
 - **NRC notified ABB regarding the change in oversight of decommissioning activities for the FUSRAP areas.**
 - **NRC met with ABB to discuss plans to supplement the site DP to include clean-up of the FUSRAP materials.**
 - **ABB requested that FUSRAP areas be formally included on license.**
- **December 2007 – Public meeting held and ABB license amended to include FUSRAP areas.**

ABB Site Decommissioning – FUSRAP Areas (cont.)

- **January 2008 – ABB submitted revised DP for FUSRAP areas excluding brook and nearby areas.**
- **September 2008 – NRC implemented memo of understanding between Environmental Protection Agency (EPA) and NRC due to future land-use change. Land-use revised to include residential area development.**
- **December 2008 – ABB resubmitted the revised DP with building surface DCGLs.**
- **Present - NRC staff reviewing certain technical aspects of the revised DP. Approval for DP use not yet granted.**

ABB Site Decommissioning - Future Work

- **NRC approves DP and NRC license is amended. Eventually the DP will be revised again to include remediation of the brook and nearby areas.**
- **ABB remediates FUSRAP areas under NRC oversight.**
- **ABB submits FSSs for remediated areas.**
- **NRC reviews and approves ABB FSSs for remediated areas.**
- **NRC conducts independent confirmatory surveys to further demonstrate DCGLs have been met.**
- **USACE, EPA, and CTDEP concur that site is ready for free release.**
- **NRC terminates the existing NRC license.**

Governmental Stakeholder Comments

- **Town of Windsor**
- **State of Connecticut**
- **US Army Corps of Engineers**
- **Naval Reactors**
- **EPA**

Questions and Answers



NRC Contact Information

Lydia Chang, Chief, Special Projects Branch, Division of Waste Management and Environmental Protection, USNRC, 301-415-8141, *lydia.chang@nrc.gov*

Randolph Ragland, Chief, Decommissioning Branch, Division of Nuclear Materials and Safety, Region I, USNRC, 610-337-5083, *randolph.ragland@nrc.gov*

Jim Schmidt, Decommissioning Branch, Division of Nuclear Materials and Safety, Region I, USNRC, 610-337-5276, *jim.schmidt@nrc.gov*