

Approach to License Termination for the CE Windsor Site

September 14, 2007

Overview

- Site Background
- Site Redevelopment
- Approach to License Termination
- Schedule
- Regulatory Coordination and Support

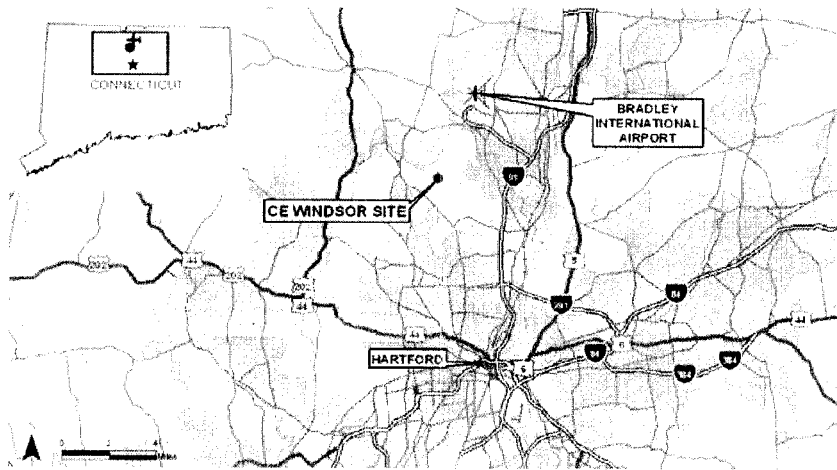


September 14, 2007

2



CE Windsor Site Location



ABB

September 14, 2007

3

MACTEC

CE Windsor Site



ABB

September 14, 2007

4

MACTEC

Site History

- 1956 – 1962: Nuclear R&D and manufacture of nuclear fuels for U.S. government (naval fuel)
- 1960s – 2000: R&D, engineering, production, and servicing of nuclear fuel systems for commercial contracts
- 2001: cease active operations with radioactive material
- 2002: begin decommissioning commercial areas
- 2005: complete decommissioning commercial areas



September 14, 2007

5



FUSRAP Summary

- Site designated FUSRAP 1994
- Remedial Investigation 1994 - 2002
- Draft Feasibility Study – 2005
- Authority for FUSRAP cleanup transferred to NRC - 2007



September 14, 2007

6



Site Goals

- Complete radiological remediation of the site to protect human health and the environment
- Demonstrate that the entire Site meets unrestricted release criteria in accordance with Subpart E of Title 10 CFR Part 20
- Partner with Town/State to redevelop Site in a manner that maximizes productive reuse



September 14, 2007

7



Site Redevelopment

- Objectives
- Town/State interests
- Schedule



September 14, 2007

8



Decommissioning Summary

- 2001 - 2003
 - Characterization and remediation of buildings
 - Release surveys of buildings
- Decommissioning Plan with Site-wide derived DCGLs (apply to both FUSRAP and commercial materials) accepted by NRC June 2004
- 2004 – 2006
 - Building dismantlement
 - Slab, foundation and subsurface utility removal
 - FSS Reports submitted 2005 & 2006
- FSS reports accepted by NRC April 2007

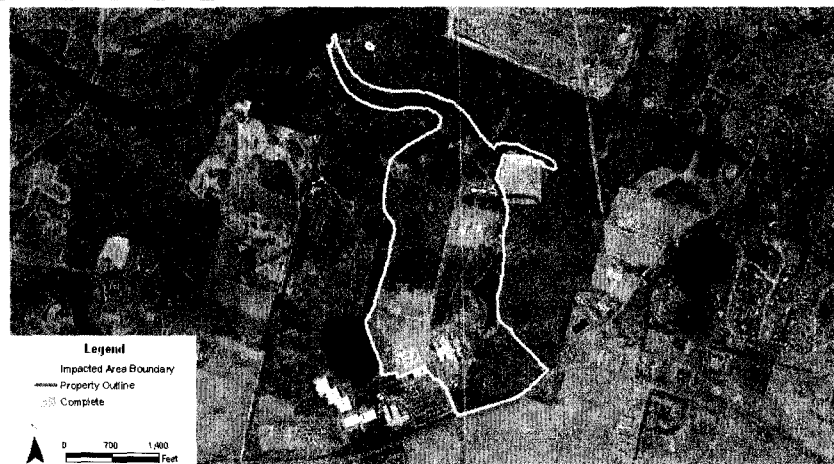


September 14, 2007

9



Commercial D&D Areas



September 14, 2007

10



Building 2 Complex Summary

- Complex covers area of 9 acres
- 4 buildings with footprints totaling more than 25,000 square feet
- 400 feet of impacted utility pipelines
- FSS
 - Buildings: 20 survey units, 1,024 measurements
 - Soil: 8 survey units, 130 samples

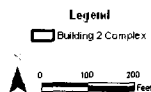


September 14, 2007

11



Building 2 Complex



September 14, 2007

12



Building 5 Complex Summary

- Complex covers area of 11 acres
- 4 buildings with footprints totaling more than 72,000 square feet
- 3,500 feet of impacted utility pipelines
- FSS
 - Buildings: 29 survey units, 729 measurements
 - Soil: 9 survey units, 138 samples

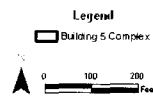
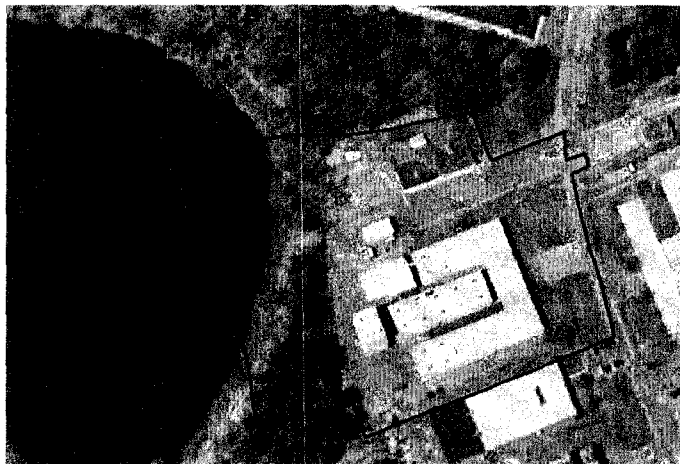


September 14, 2007

13



Building 5 Complex



September 14, 2007

14



Building 17 Complex Summary

- Complex covers area of 14 acres
- 1 building with footprint of 36,000 square feet
- 800 feet of impacted utility pipelines
- FSS
 - Building: 5 survey units, 145 measurements
 - Soil: 8 survey units, 139 samples

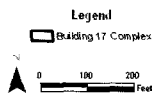


September 14, 2007

15



Building 17 Complex

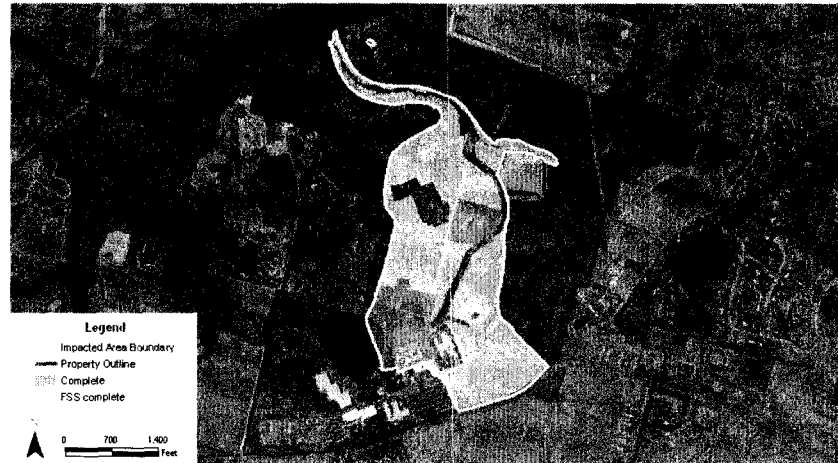


September 14, 2007

16



FSS Complete Areas



ABB

September 14, 2007

17

MACTEC

License Termination Approach

- Amendments to Decommissioning Plan for FUSRAP areas
- Follow same process as done for Commercial D&D areas
 - Same Health & Safety processes as Commercial D&D work
 - Same building release criteria - RegGuide 1.86
 - Same DCGLs for soil and sediment
 - Same FSS Plan

ABB

September 14, 2007

18

MACTEC

Project Management

- Same as Commercial D&D
 - ABB Senior Project Manager
 - MACTEC as decommissioning design and oversight contractor
 - Established site knowledge
 - Institutional continuity



September 14, 2007

19



Health and Safety

- Same as Commercial D&D
 - Existing program and procedures
 - No violations during decommissioning
 - Continuity in management
 - Over 170,000 work hours without an OSHA recordable incident



September 14, 2007

20



Environmental, Wildlife and Historical

- Updated versions of Environmental Report, Historical Preservation, Endangered Species evaluation
 - No anticipated changes



September 14, 2007

21



Lessons Learned

- Incorporate RAIs from commercial decommissioning work
- Incorporate RAIs from FSS process
- Incorporate lessons learned from decommissioning operations
- Incorporate lessons from industry decommissioning work on NRC website



September 14, 2007

22



FUSRAP Areas

- Buildings 3 and 6
- Drum Burial Pit
- Woods Area
- Clamshell Pile
- Equipment Storage Yard
- Industrial Waste Line
- Debris Piles
- Site Brook

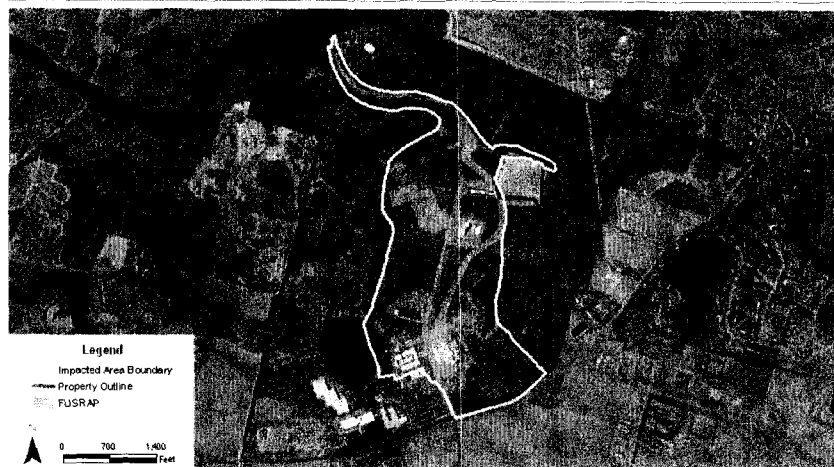


September 14, 2007

23



FUSRAP Areas



September 14, 2007

24



Buildings 3 and 6 Summary

- Initial structures and systems built for AEC contract
 - Building 3 footprint 48,000 square feet
 - Building 6 footprint 2,750 square feet
 - Area of 5 acres
 - Similar construction as Buildings 1, 2, 5, 6A

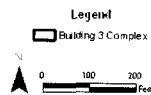
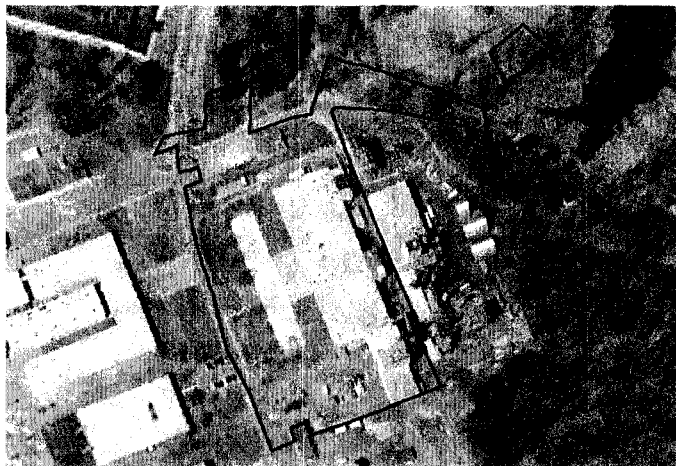


September 14, 2007

25



Buildings 3 and 6

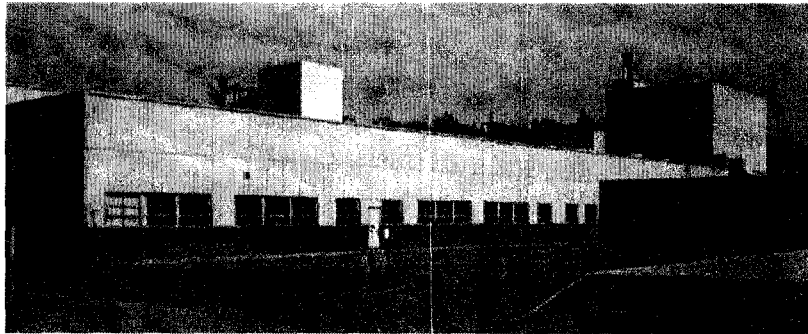


September 14, 2007

26



Building 3



ABB

September 14, 2007

27

MACTEC

Building 6 Summary

Constructed in 1956

- Liquid radiological waste storage and dilution
- Discharge treated water to Site brook
- After discharge terminated, evaporator used to treat liquid waste
- 2001 – Present: Not in use

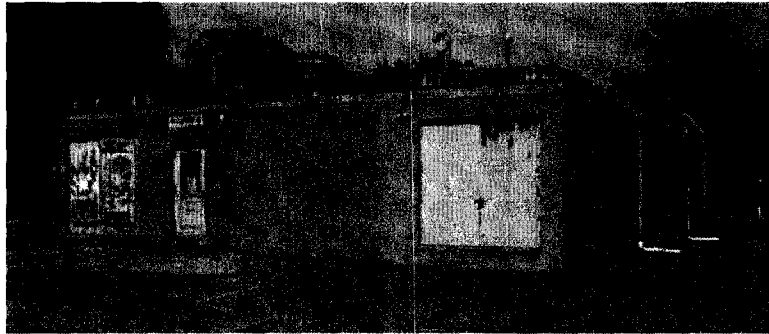
ABB

September 14, 2007

28

MACTEC

Building 6



ABB

September 14, 2007

29

MACTEC

Drum Burial Pit Summary

- Used for disposal of radiological materials including PPE, wires, tools, vermiculite, insulation, and soils
 - Discovered in 1980s
 - 15 feet deep
 - Area of 1 acre
- 1990: excavated a portion and materials were repackaged

ABB

September 14, 2007

30

MACTEC

Drum Burial



ABB

September 14, 2007

31

MACTEC

Woods Area Summary

- Former storage of miscellaneous drums and used equipment
 - Area of 7 acres

ABB

September 14, 2007

32

MACTEC

Woods Area



ABB

September 14, 2007

33

MACTEC

Clam Shell Pile Summary

- Clamshells used to buffer industrial waste discharges to the stream
 - Area of 0.2 acre
 - Discovered in 1999

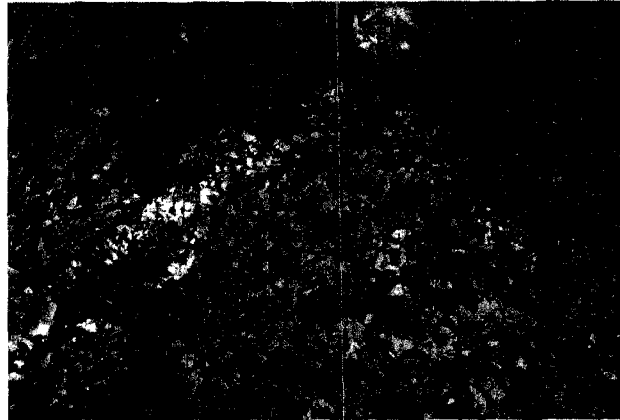
ABB

September 14, 2007

34

MACTEC

Clam Shell Pile



ABB

September 14, 2007

35

MACTEC

Equipment Storage Yard Summary

- Several partially buried drums
 - Area of 0.2 acre

ABB

September 14, 2007

36

MACTEC

Industrial Waste Line Summary

- Includes original industrial and sanitary waste lines and newer industrial waste line
 - Radioactive wastes were first diverted to Buildings 6 and 6A for dilution
 - All waste was discharge to the Site brook
 - New industrial waste PVC line installed 1974
 - Length of 3,700 feet

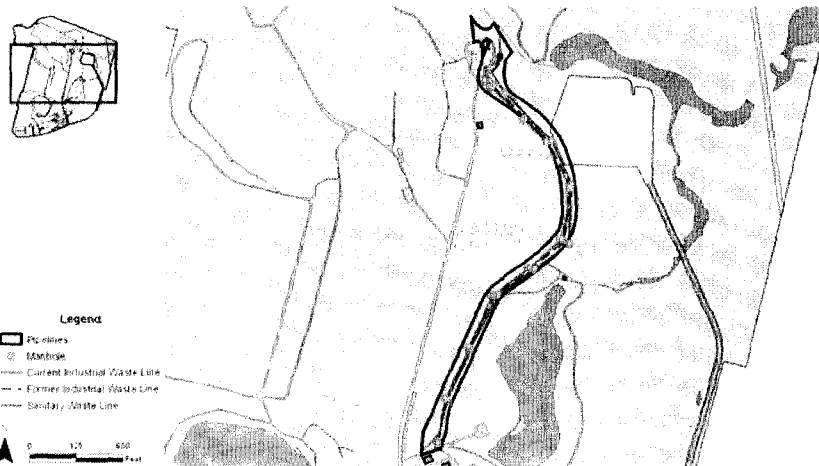


September 14, 2007

37



Industrial Waste Line



September 14, 2007

38



Debris Pile Summary

- Located adjacent to site brook near industrial waste line outfall
 - Debris includes partially buried drum, concrete, building materials, clamshells
 - Area of 0.5 acre

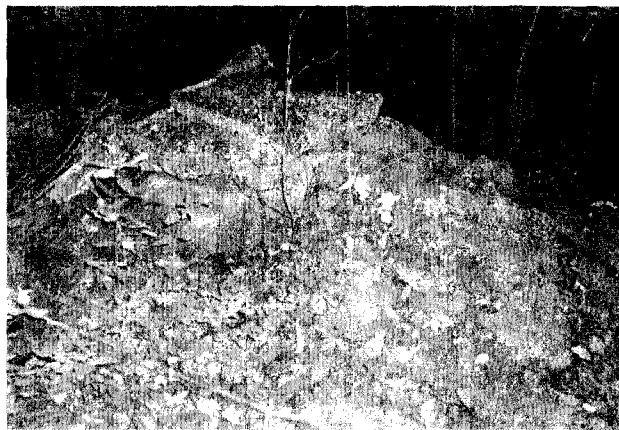


September 14, 2007

39



Debris Piles



September 14, 2007

40



Site Brook Summary

- Received industrial waste, treated sanitary waste, and storm water
- Received discharges from S1C training reactor
 - Area of 4 acres
 - Length of 3,200 feet
 - Width of brook 3 to 10 feet



September 14, 2007

41



Site Brook



Legend
Site Brook



September 14, 2007

42



Site Brook



September 14, 2007

43



Proposed D&D Approach

- Same process as Commercial D&D
 - Remediate buildings for dismantlement
 - Remediate soils
 - Remove impacted underground utilities
 - FSS
 - Same process and procedures



September 14, 2007

44



Proposed Approach to Buildings

- Buildings 3 and 6
- Same as Commercial D&D Buildings
 - Perform remediation
 - Perform Pre-Dismantlement Surveys and submit Report to DEP and NRC
 - Dismantlement to slabs
 - Slab and utilities removal



September 14, 2007

45



Proposed Approach to Soils

- Same as Commercial D&D areas
 - Remediate elevated areas
 - Remove building slabs and all utilities
 - Excavate and remove industrial waste lines
 - Leave excavations / trenches open for verification surveys
 - Perform FSS and submit FSS Report to DEP and NRC



September 14, 2007

46



Proposed Approach to Pipelines

- Same as Commercial D&D underground utilities
 - Excavate sections of pipeline
 - Characterize pipeline in trench
 - Remove pipeline
 - Survey and remediate trench if needed
 - FSS of trench and verification surveys
 - Backfill trench



September 14, 2007

47



Proposed Approach to Site Brook

- Divert brook in sections for remediation
- Start at east end and work west towards river
- Will need input from DEP and federal agencies prior to wetlands work



September 14, 2007

48



Proposed Schedule

- 2007
 - License amendment to add FUSRAP areas to license
 - Amendment 1 to DP
- 2008
 - Soil remediation
 - Soil FSS
 - Amendment 2 to DP
 - Building Remediation & Dismantlement
- 2009
 - Brook and debris piles remediation
 - Brook FSS
- 2010
 - License termination



September 14, 2007

49



Regulatory Approach

- Minor license amendment to incorporate FUSRAP areas
- Two DP Amendments in order to address different activities for FUSRAP areas



September 14, 2007

50



Decommissioning Plan Amendment 1

- Incorporate FUSRAP areas into DP
- No anticipated changes to decommissioning methods/procedures
- Would allow work to proceed on buildings, utilities and soils areas



September 14, 2007

51



Decommissioning Plan Amendment 2

- Specifically add remediation of site brook and adjacent debris piles
- Some additional methods needed for brook remediation



September 14, 2007

52



Regulatory Coordination and Support

- ABB commitment to provide regular and frequent status reports to regulators
- Need allocation and coordination of NRC resources for timely review of submittals
- Need early coordination with NRC/ORISE for in process verification
- Approval of soil FSS needed by 1st quarter 2009
- License termination needed by mid 2010



September 14, 2007

53

