

Connecticut Yankee License Termination Plan Final Status Survey



Meeting with the USNRC

January 19, 2000



Overview

- Summarize Previous NRC-CY License Termination Plan Discussions
- Discuss Final Status Survey Development
- Obtain NRC Feedback on Approach
- Discuss Future Interactions on Selected Topics

Agenda

- LTP Background
- Historical Site Assessment and Site Characterization Overview
- Final Status Survey Elements and Design
- Implementation and Data Collection
- Project Milestones
- Future Discussion Topics

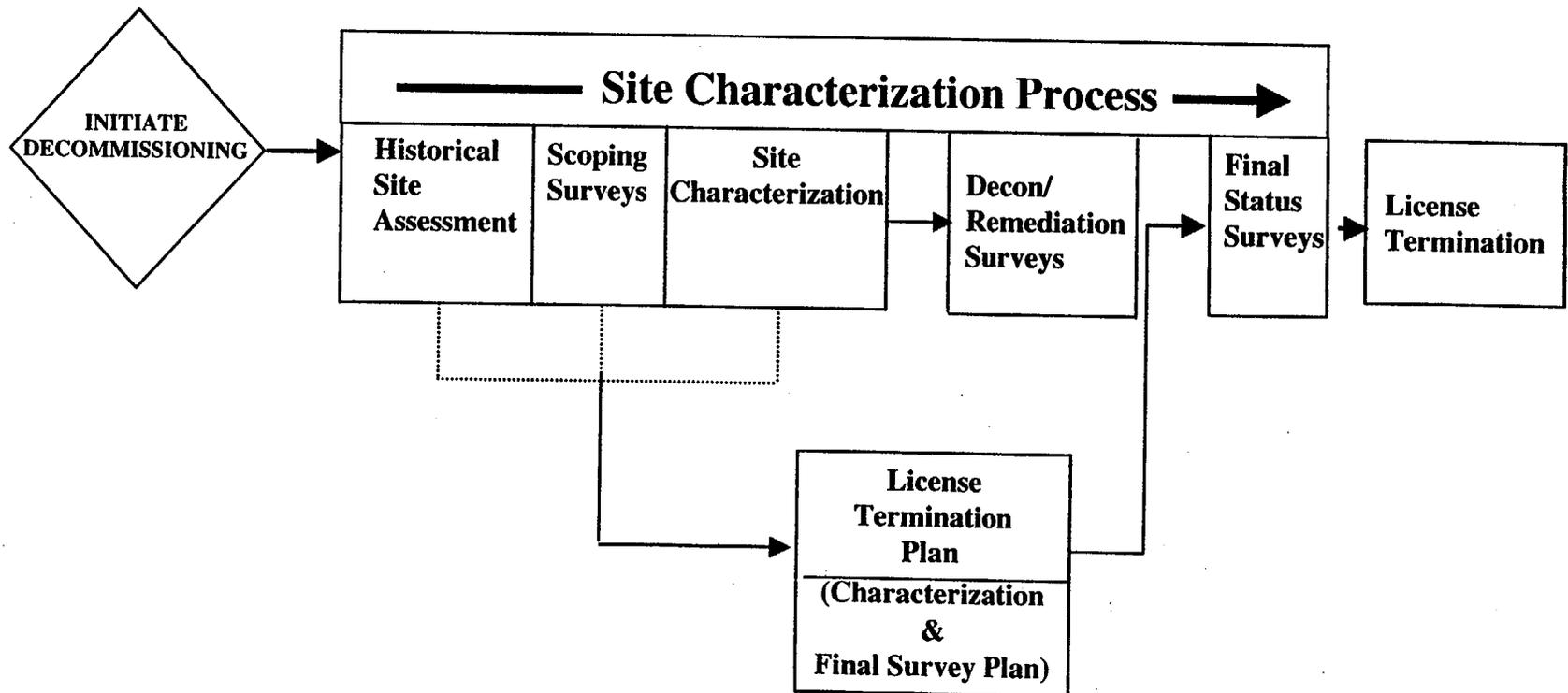
LTP Background

- Road Map of How CY Intends to Release Site for Unrestricted Use
- Contents Include:
 - Site release criteria
 - Radiological survey plans
 - Dose modeling methods
- NRC-Required Document Demonstrating Safe Return of Site to Unrestricted Use

Previous NRC Meetings

- September 23, 1999
 - Discuss LTP Development
 - Present Site Release Criteria
 - Identify Future Meeting Topics
- December ~~23~~¹⁶, 1999
 - Describe Decommissioning Strategy
 - Discuss Dose Modeling Approach

Site Characterization



Historical Site Assessment

- Conducted Over Two Year Period
- Extensive Review of Operational History:
 - Personnel Interviews
 - Records review
- NRC Independent Assessment
- Results Used to Focus Site Characterization Efforts

Site Characterization

- Site Characterization To Support License Termination Plan--Complete
- Additional Characterization Data Will Be Accumulated During Decommissioning Process

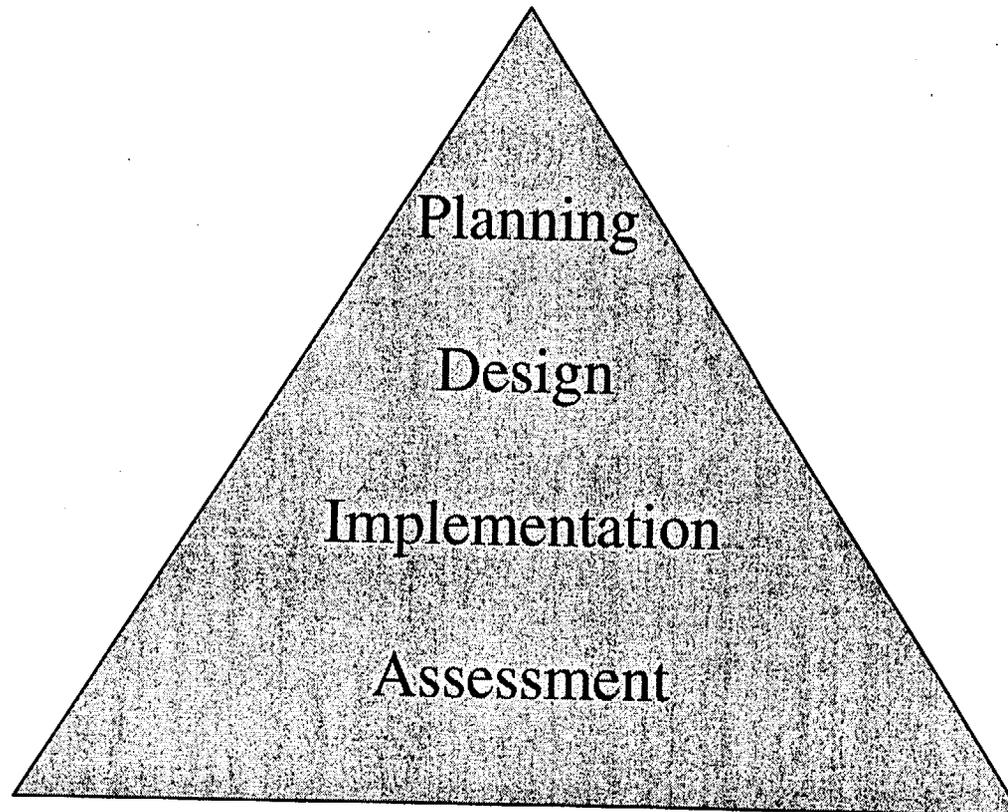
Site Characterization (Cont'd)

- Source Term Characterized
 - Located primarily within radiologically controlled area
 - Isotopes (H-3, Co-60, Cs-137, TRUs)
 - Structures, systems, soil, and groundwater
- Area Classification in Accordance With MARSSIM--Complete

Final Status Survey Objective

Demonstrate That the Site Meets the
Release Criteria for License Termination
(i.e., ALARA and 25 mrem/yr)

Final Status Survey Elements



Final Status Survey Planning

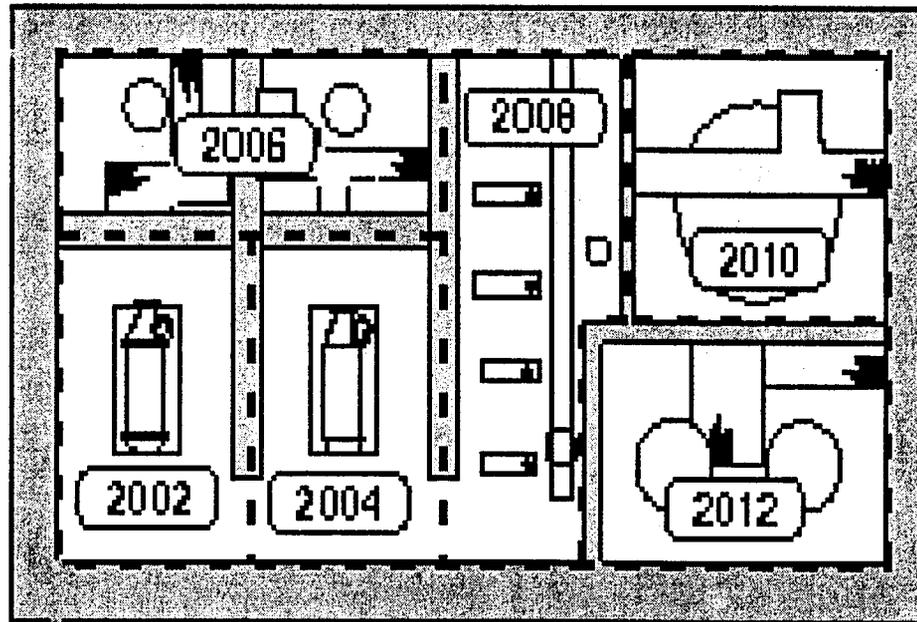
- Identify Data Quality Objectives
- Establish Survey Units
- Determine Survey Unit Classification
- Identify Instrument Performance Criteria
- Determine Background
- Establish Derived Concentration Guideline Levels (DCGLs)
- Establish Protocols to Determine Compliance

Data Quality Objectives

- Identify Process Goals – Compliance With Release Criteria
- Identify Specific Decisions – Radionuclides, DCGLs, Survey Boundary
- Determine Inputs – Measurements, Surveys, Analysis, Optimization of the Design for Obtaining Data
- Assess Data and Perform Decision Analysis

Survey Units

Primary Auxiliary Building--Elevation 19'-0"



RHR ROOMS

Survey Units (Cont'd)

Survey Unit	Survey Unit Description	Classification	Floor Appr. Size m ²	Total Appr. Size m ²
2002	Auxiliary Building RHR Pump Room A	1	25	275
2004	Auxiliary Building RHR Pump Room B	1	25	275
2006	Auxiliary Building RHR Heat Exchangers	1	30	390
2008	Auxiliary Building Primary Drain Tank Pump Room	1	35	380
2010	Auxiliary Building Primary Drain Tank Room	1	30	320
2012	Auxiliary Building Aerated Drain Tank Room	1	25	285

Instrument Performance

- Performance Specifications Included in LTP
- Advanced Technology Will Be Evaluated for Surveys
- Instrumentation Will Be Evaluated Against Performance Requirements Prior to Use in Final Status Surveys

Background Determinations

- Soil Background
 - Cs-137 from primarily from weapons testing
 - Areas not impacted by site operations
 - Extensive environmental data available from material recovery project
- Material Background
 - Evaluate similar building materials
 - Material not impacted by site operations
 - Validate with advanced technologies where appropriate

Derived Concentration Guideline Levels (DCGLs)

- Nuclide Specific DCGLs will be submitted with the LTP
- Operational DCGLs will be based on:
 - Characterization data
 - Sum of fractions approach based on ratio of radionuclides
 - Scaling factors for hard to detect nuclides

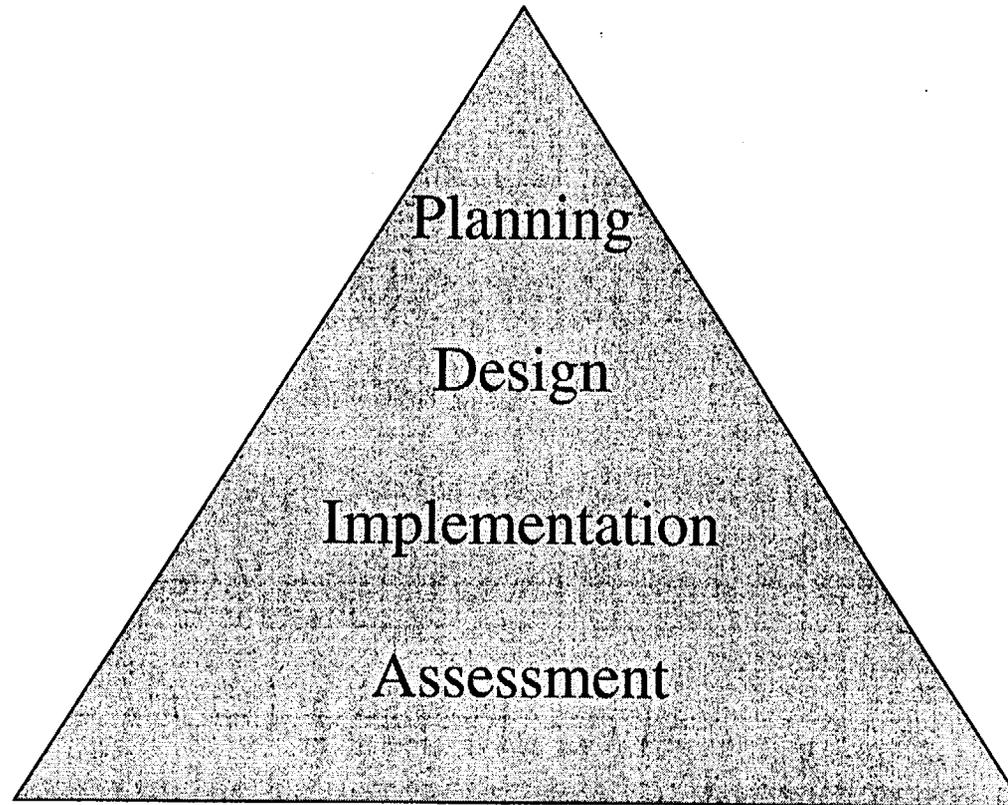
Derived Concentration Guideline Levels (cont'd)

- Elevated Measurement Comparison DCGL (DCGL_{EMC}) Established Based on Area Factors (to a Minimum of 1 m²)
- Proposed Component Criteria Release Based on Regulatory Guide 1.86

Survey Protocols

- Surveys Will Include Scanning, Fixed Measurements, and Media Samples as Appropriate
- Scanning Coverage and Investigations Requirements in Accordance with DG-4006 and MARSSIM
- Number and Location of Surface Measurements and Media Samples Based on MARSSIM Guidelines

Final Status Survey Elements



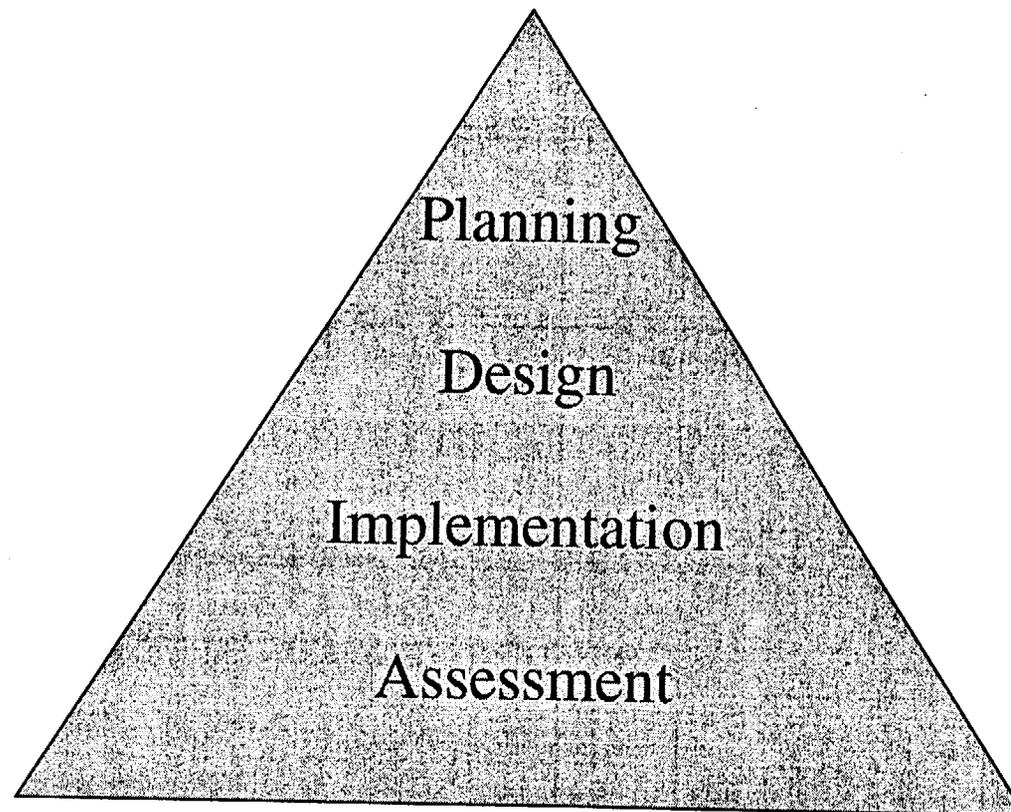
Final Status Survey Design

- Survey Packages Will:
 - Identify operational DCGL
 - Specify instrumentation
 - Specify survey methods
 - Define sample/measurement points
- Assure Compliance With LTP

Final Status Survey Design (Cont'd)

- Combination of MARSSIM Statistical Approach and Advanced Technologies
 - Statistical approach includes fixed measurements, conventional scanning, and sampling
 - Advanced technologies evaluated where survey quality and efficiency can be increased

Final Status Survey Elements



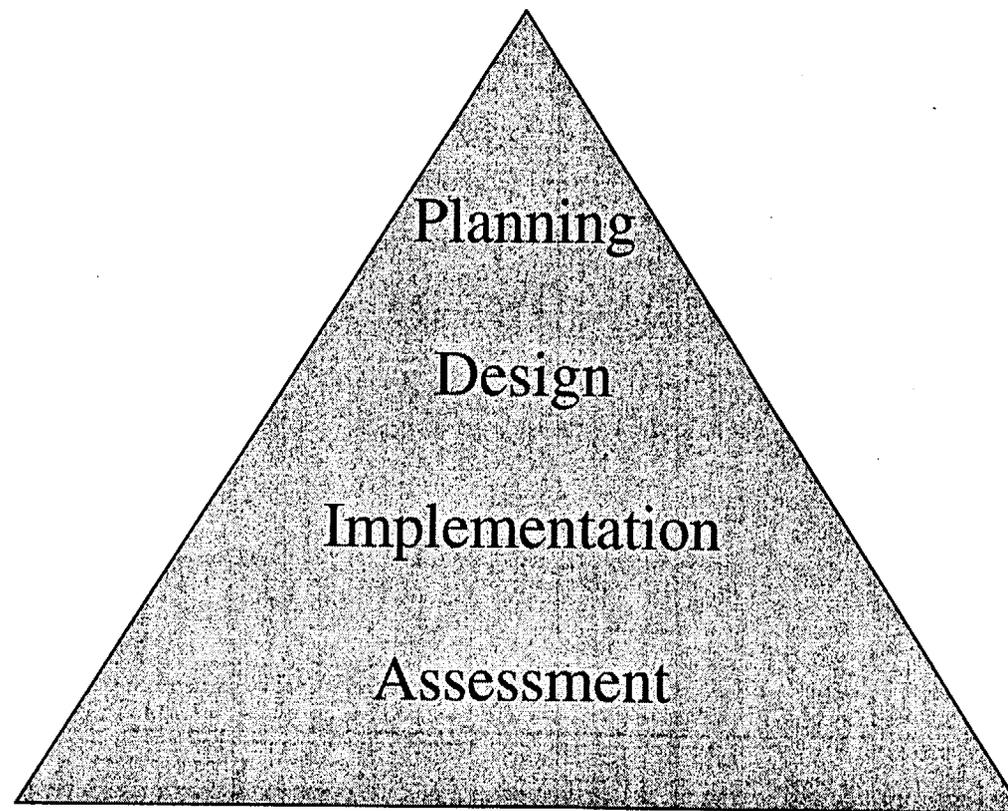
Implementation and Data Collection

- Detailed Procedures For:
 - Instrumentation calibration, use, etc.
 - Sample/measurement methods
 - Chain of custody
 - Data management
- Personnel Training Specific to Final Status Survey
- Sample Analysis Both On Site and Off Site
- Computerized Data Management System

Implementation and Data Quality Assurance

- Quality Assurance Project Plan
 - Personnel training
 - Instrument calibration
 - Vendor services
 - Chain of custody
 - Split samples/duplicate samples
- CY Oversight
- NRC Verification

Final Status Survey Elements



Survey Data Assessment

- Verify Area Classification
- Statistically Evaluate Survey Data
- Compare Results With Acceptance Criteria on a Survey Unit Basis

Survey Data Assessment (Cont'd)

- Final Status Survey Report
 - Phased submittal upon completion of buildings and areas
- Schedule Will Be Coordinated With Independent Verification Processes
 - Side-by-side measurements
 - Independent measurements

Final Status Survey

- Plan Developed to Demonstrate Compliance With Site Release Criteria
- Consistent With MARSSIM Guidelines
- Survey Implementation Through Detailed, Approved Procedures and Trained Personnel
- Integration of Advanced Monitoring Technologies
- Extensive Quality Assurance Processes
- Thorough Data Assessment and Detailed Reporting

Project Milestones

- April 2000 Submit LTP to NRC
- June 2000 Public Meeting on LTP
- September 2000 NRC Approval
- April 2003 Complete Site
Remediation and
Survey Activities

Future Discussion Topics

- Change Criteria
- Phased Site Releases
- Scope of Financial Information
- Mechanics of submittal