



U.S. Department of Energy
Office of Civilian Radioactive Waste Management

www.ocrwm.doe.gov

Project Schedule Discussion

Presented to
**DOE/NRC Technical Exchange on Yucca Mountain
Surface and Subsurface Facilities**

Presented by
Richard L. Craun
Acting Director, Office of Project Management and Engineering
U.S. Department of Energy

September 14-15, 2004
Las Vegas, Nevada

Introduction/Purpose

- **Yucca Mountain Project (YMP) Project Scope Overview**
- **Accomplishments to Date**
- **Benchmarking Efforts**
- **Work Breakdown Structure**
- **Nuclear Facilities Overall Schedule**
- **Ongoing Challenges to Schedule**
- **Key Upcoming Events/Milestones**



Yucca Mountain Project Scope Overview

- **Yucca Mountain Repository's major surface facilities occupy approximately 1.5 square miles**
- **Approximately 70 miles of tunnel 18-25 feet in diameter**
 - **Approximately 40 miles of 18-foot in diameter emplacement drifts**
- **Peak construction craft staffing over 2000**
- **12 construction cranes on site (4 towers and 8-150-ton capacity)**



Yucca Mountain Project Scope Overview

(Continued)

- **Summary of commodities:**
 - 4.3 million cubic yards of excavation
 - 650,000 cubic yards of concrete
 - 21,000 tons of steel
 - 1,100 tons of heating, ventilation, and air-conditioning (HVAC) duct and supports
 - 400,000 linear feet of electrical raceway
 - 2.7 million linear feet of wire and conduit
- **Over 20,000 activities loaded in current schedule**



Accomplishments to Date

- ***Quality Assurance Requirements and Description (QARD)***
- **License Application (LA) submittal preparation – 85 percent complete**
 - **Draft LA currently in DOE review**
 - ◆ **Technical review completed**
 - ◆ **Integrated chapter review completed**
 - ◆ **Management review in progress**
- **100 percent complete on Key Technical Issues (KTIs) Agreement Responses**
 - **Total of 293**



Accomplishments to Date

(Continued)

- **Preclosure Safety Analysis (PCSA) 90 percent complete**
- **LA design 95 percent complete**
- **Integrated Engineering, Procurement, and Construction (EPC) “proof of concept” schedule being developed**



Benchmarking Efforts

- **Sites/projects benchmarked:**
 - Hanford Waste Treatment Plant, Richland, WA
 - Private Spent Fuel Storage Initiative
 - MOX Facility – Savannah River Site
- **Benchmarking attributes/characteristics:**
 - Overall complexity
 - Licensing/permitting
 - Commodities
 - Schedule durations
 - Budget performance
 - Organizational alignments
- **Benchmarked against commercial nuclear licensees**



Work Breakdown Structure

- Refer to Work Breakdown Structure (WBS) (Attachment A)



Nuclear Facilities Overall Schedule

- Overall durations and sequencing
 - Walkthrough schedule (Attachment B)



Ongoing Challenges to Schedule

- Availability of sufficient numbers of qualified craft personnel
- Ability to meet concrete pour schedules
- Availability of aggregate to support the concrete activities
- Congestion, human factor concerns in scheduling work activity locations
- Coordination/sequencing of construction activities and operations

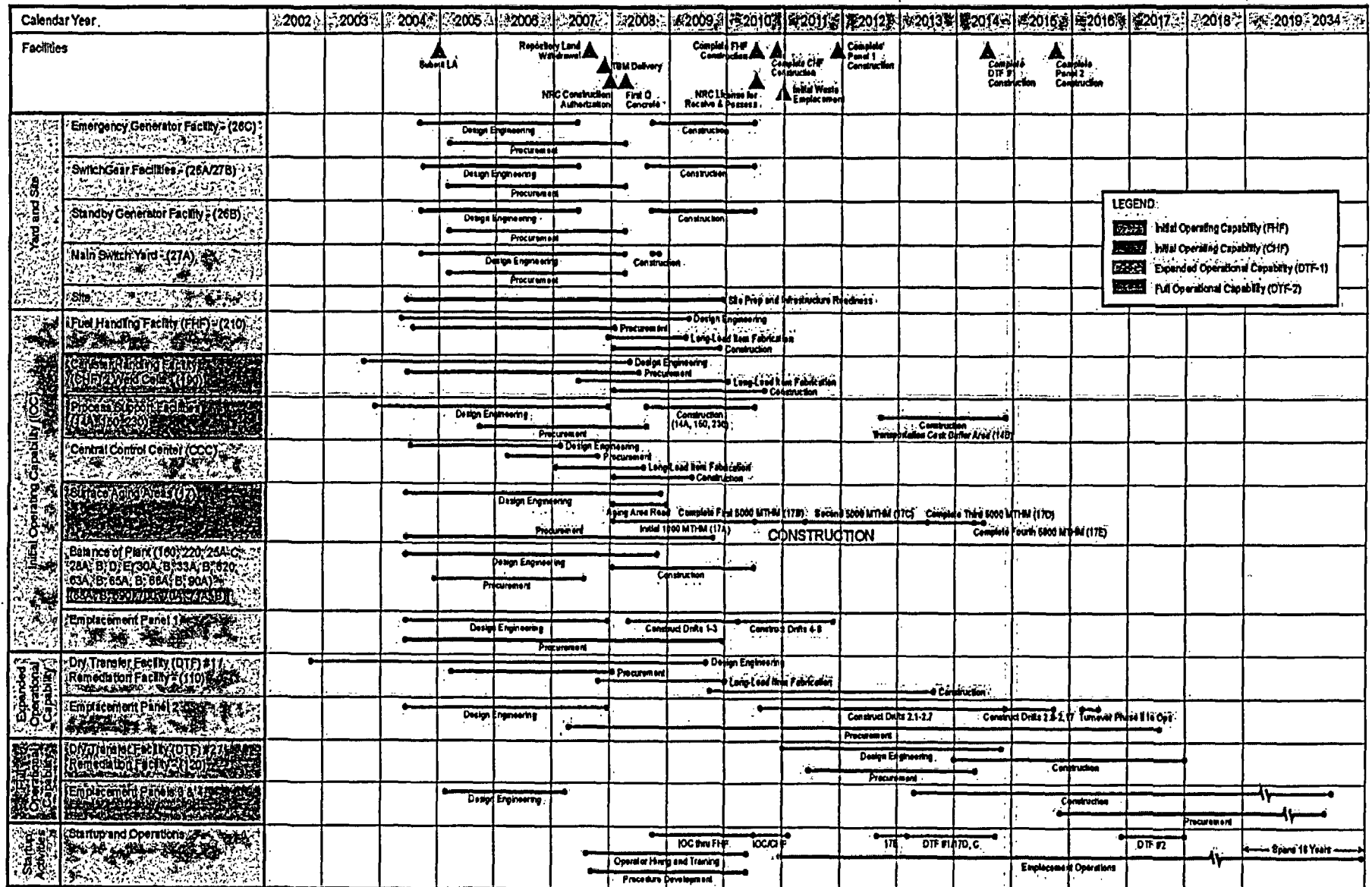


Key Upcoming Events/Milestones

- **LA submittal to NRC – December 2004**
- **Final Environmental Impact Statement (FEIS)/
Environmental Report accompanies LA**
- **Full-scale waste package prototype – June 2005**
- **Start Final Design (Fuel Handling Facility (FHF),
Canister Handling Facility (CHF)) – September 2005**
- **Preliminary design to support DOE Critical
Decision 2**
 - Feeds material take-offs
- **Independent government estimate**



Attachment B

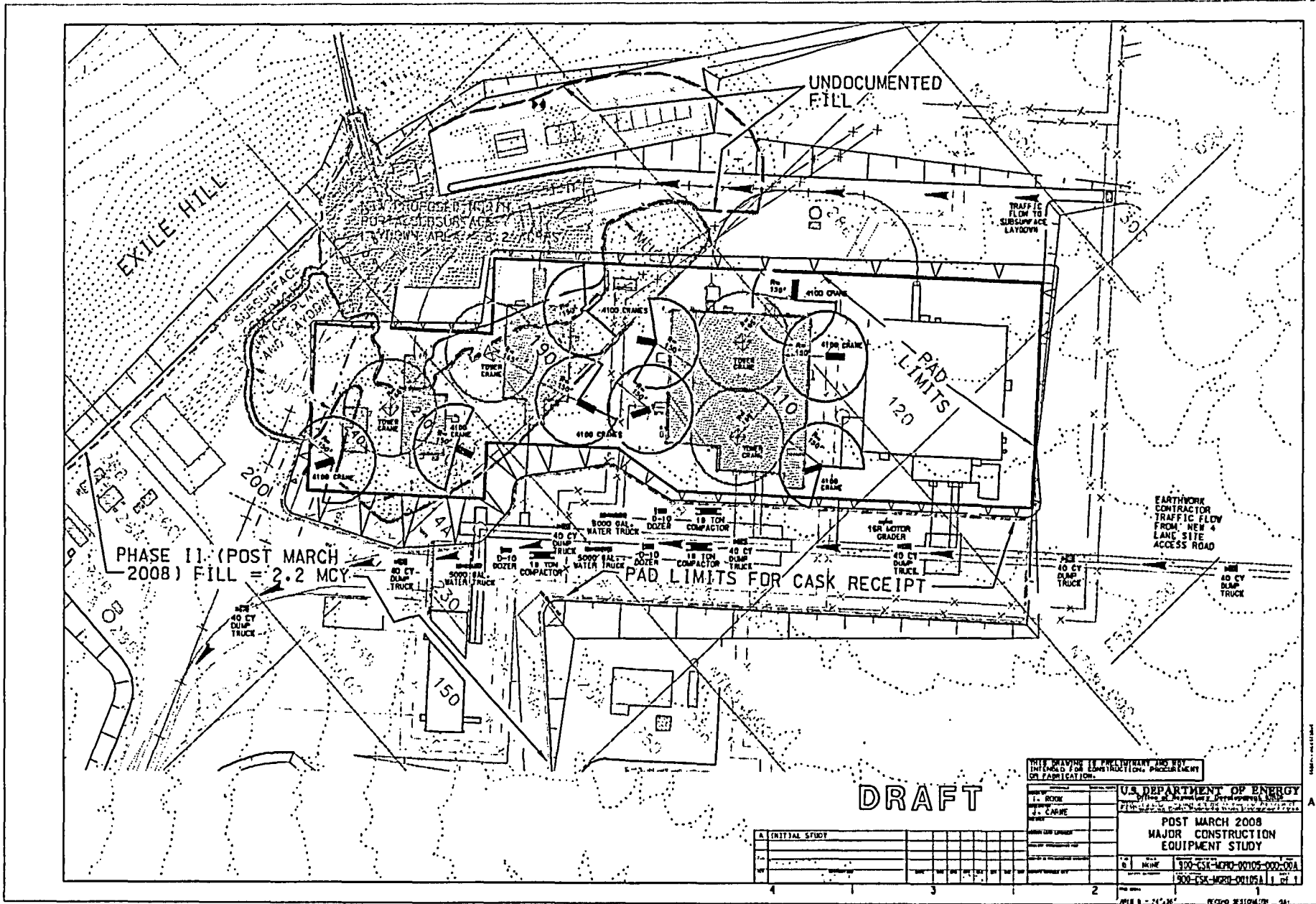


LEGEND:

- Initial Operating Capability (IHF)
- Initial Operating Capability (CHF)
- Expanded Operational Capability (DTF-1)
- Full Operational Capability (DTF-2)

002530_LA_UM#





THIS DRAWING IS PRELIMINARY AND NOT INTENDED FOR CONSTRUCTION OR FABRICATION.

1- ROOM	
2- CARVE	
3- CARVE	
4- CARVE	
5- CARVE	
6- CARVE	
7- CARVE	
8- CARVE	
9- CARVE	
10- CARVE	
11- CARVE	
12- CARVE	
13- CARVE	
14- CARVE	
15- CARVE	
16- CARVE	
17- CARVE	
18- CARVE	
19- CARVE	
20- CARVE	
21- CARVE	
22- CARVE	
23- CARVE	
24- CARVE	
25- CARVE	
26- CARVE	
27- CARVE	
28- CARVE	
29- CARVE	
30- CARVE	
31- CARVE	
32- CARVE	
33- CARVE	
34- CARVE	
35- CARVE	
36- CARVE	
37- CARVE	
38- CARVE	
39- CARVE	
40- CARVE	
41- CARVE	
42- CARVE	
43- CARVE	
44- CARVE	
45- CARVE	
46- CARVE	
47- CARVE	
48- CARVE	
49- CARVE	
50- CARVE	
51- CARVE	
52- CARVE	
53- CARVE	
54- CARVE	
55- CARVE	
56- CARVE	
57- CARVE	
58- CARVE	
59- CARVE	
60- CARVE	
61- CARVE	
62- CARVE	
63- CARVE	
64- CARVE	
65- CARVE	
66- CARVE	
67- CARVE	
68- CARVE	
69- CARVE	
70- CARVE	
71- CARVE	
72- CARVE	
73- CARVE	
74- CARVE	
75- CARVE	
76- CARVE	
77- CARVE	
78- CARVE	
79- CARVE	
80- CARVE	
81- CARVE	
82- CARVE	
83- CARVE	
84- CARVE	
85- CARVE	
86- CARVE	
87- CARVE	
88- CARVE	
89- CARVE	
90- CARVE	
91- CARVE	
92- CARVE	
93- CARVE	
94- CARVE	
95- CARVE	
96- CARVE	
97- CARVE	
98- CARVE	
99- CARVE	
100- CARVE	

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management
POST MARCH 2008 MAJOR CONSTRUCTION EQUIPMENT STUDY

300-ESK-MCRD-00105-000-000
300-ESK-MCRD-00105-000-001

FIGURE 8 - 21' x 21' REVISION 01/04/04

