

PMSummerColpEM Resource

From: Minarik, Anthony
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Subject: Geologic Program Overview-Presentation provided during October 4, 2011 Inspection
Attachments: I_NRC Inspection Unit 3 Mapping 10-4-11EMW.pdf

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Technical Staff



Shaw Nuclear

- Ev Washer – Geotechnical Supervisor
- Matthew Cooke – Sr. Site Geologist
- Gina Ferrugia – Staff Geologist
- Adair Stevenson – Staff Geologist
- Perry Stewart – Site QA Manager

Fugro Consultants (FCL)

- Frank Syms – Project Manager
- Randy Cumbest – Geologic Mapping Lead
- Stephanie Briggs – Project Geologist
- Justin Cox (Lead Field Geologist), Tim Glidden, Mark Zellman, Jason Altecruse - Staff Geologists (field geologic mapping and reporting)
- Clint Eldridge – Quality Assurance



Regulatory Background



- NUREG 0800, SRP 2.5.1, 2.5.2, 2.5.3 - COL license granted based on commitment of applicant to provide detailed geologic maps of excavations for safety-related structures, identify any features of engineering, geologic or seismic significance, and initiate NRC inspections
- Reg Guide 1.132 - requires construction mapping and as-built data compilation to evaluate the basis of foundation design for safety-related structures. Invokes 10 CFR 50.9 for notifying the NRC of any unusual observations
- Reg Guide 1.208 - Demonstrate that features discovered during construction (faults, soft zones, or other features of engineering significance) do not affect the safety of the plant
- NUREG/CR 5738 - Provides details for subsurface investigation and mapping methods
- Above regulatory requirements have been satisfied for V.C. Summer Unit 2



Program Outline



V.C. Summer Geologic Mapping Program includes:

- “Target of opportunity” reconnaissance of exposures in various site excavations
- Mapping of trenches and test pits in residual soil and saprolite prior to start of Power Block (PB) excavations
- Mapping of PB excavation at temporary retaining walls
- Mapping of top of rock (MWR) surface in the area of the Nuclear Island (NI) and CWS Area.
- Mapping of excavation walls and final foundation grade in “sound rock” beneath the Nuclear Island
- Mapping of key features in excavations for CWS Trench Areas (focus on structures which extend from the Nuclear Island excavation).
- Mapping of key features at final grade within the balance of Power Block Excavation (best efforts basis primarily in PWR and MWR).
- Compilation of geologic maps and interpretative reports for the Unit 2 and 3 excavations.

Goal: To document geology exposed in the excavations and compare to site geology as reported in the FSAR, Chapter 2.5



Requirements, Plans and Procedures



- **Shaw ESSOW – Consulting Services for Geologic Mapping - QA Category I**
- **FCL Plans and Procedures:**
 1. Project Planning Document (PPD)
 2. Project Instructions (PIs)
 - Geologic Mapping Data Collection Plan
 - Laboratory Testing Plan
 - Geoscience Evaluation and Analysis Plan
 - Work Instructions (WIs):
 - Field Records
 - Survey Control
 - Field Mapping Standards
 - Sampling Protocol, Handling and Storage
 - Data Compilation and Verification
 - Unit 2 and 3 Excavation Wall Photography and Mapping
 - GPS Unit Accuracy Verification
 - Unit 2 and 3 NI and CWS Area Preliminary Geologic Mapping
 - Unit 2 and 3 NI Final Foundation Mapping



Quality Assurance



The mapping, data acquisition, and analysis activities shall have a “pedigree” equivalent to the site investigations performed for the COLA - FSAR Chapter 2.5

- Mapping and data evaluation are performed under the FCL NQA-1 program
- Shaw Audit V2009-07 of FCL Program prior to Contract Award –dated 9/17/09
- Shaw Implementation audit V2010-15 - dated 8/30/10
 - Identified no technical deficiencies; two programmatic deficiencies related to:
 - 10CFR21 Procedure Posting
 - FCL PPD did not address 10CFR 50.55(e)
 - Responses accepted and Audit Closed 12/8/10
- SHAW performed QC surveillances of Fugro mapping, records management and subcontractors:
 - 4/22/10 Report No. S-132177-2010-008: surveillance results satisfactory
 - 6/23/10 Report No. S-132177-2010-0013: surveillance results satisfactory
 - 4/4/11 Report No. S-132177-2011-005: One Minor C/A (Sample Inventory Log) – Corrected
 - 8/31/11 Report No. S-13217-2011-019 – Geologic Research, Inc. (FCL Geochronology Subcontractor) - Satisfactory



Current Status – Future Work



Completed:

- Mapping of Trenches in Soil Across Units 2 & 3 (pre-Excavation of PBs)
- Unit 2 - Mapping at Temporary Retaining Wall (PB Excavation)
- Unit 2 – Mapping Top of Rock (MWR) Mapping in the NI and CWS Pipe Trench Area
- Unit 2 - Mapping Final Foundation Grade Sound Rock in the NI Area
- Unit 3 - Mapping at Temporary Retaining Wall (for project records)

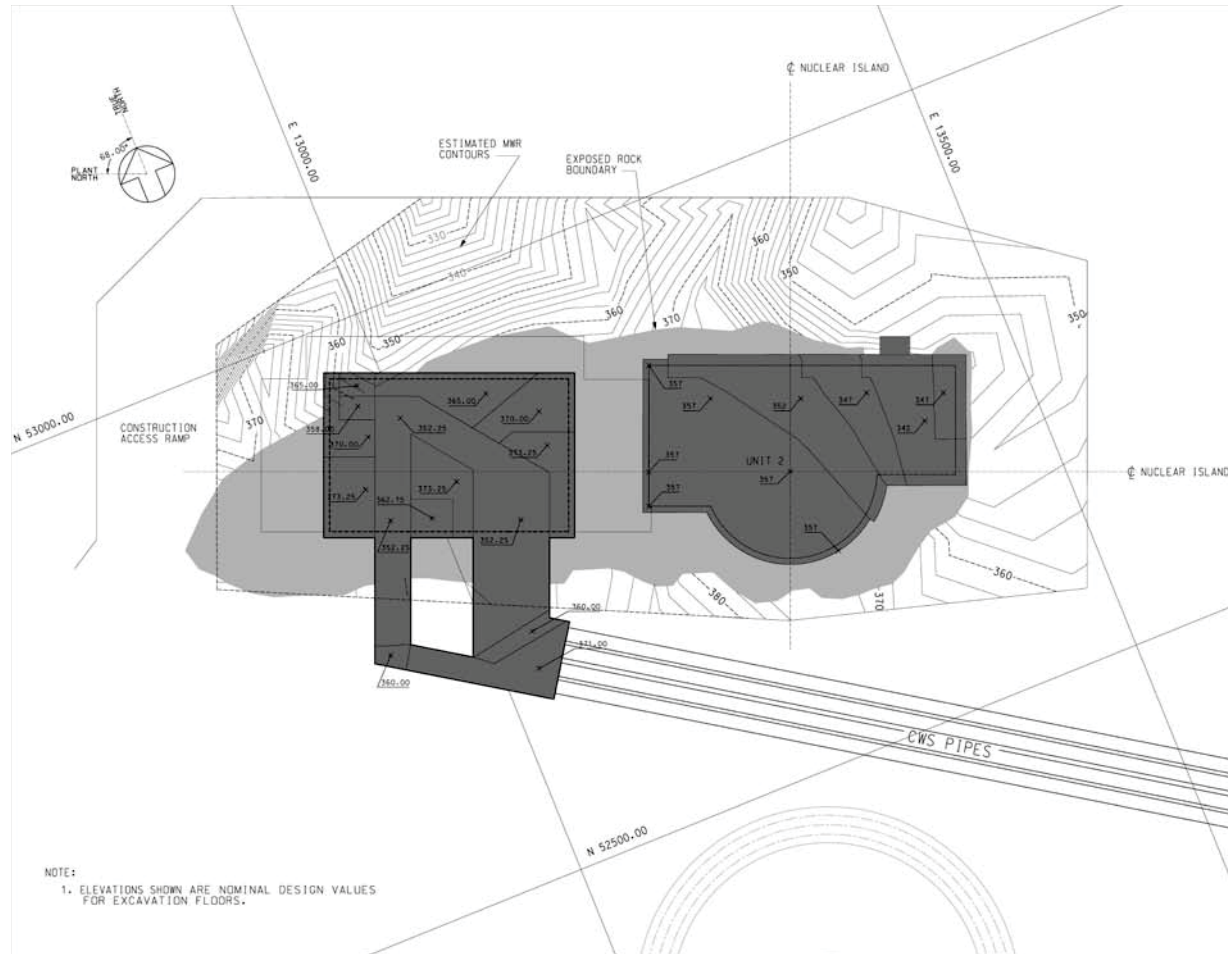
Currently:

- Unit 2 Mapping final grade at CWS Pipe Trenches (for project records)
- Finalizing Unit 2 Geologic Mapping Report
- Unit 2 – Geochronology
- Unit 3 – Mapping Top of Rock (MWR) in the NI and CWS Pipe Trench Area

Next Steps:

- Excavate perimeter of Unit 2 PB to rock and document any significant features (for project records)
- Unit 3 - Excavate NI area to final grade and map in detail the rock walls and floor
- Unit 3 – Excavate CWS Pipe Trench Area to final grade and map (for project records)
- Prepare Unit 3 Geologic Mapping Report

Unit 2 Excavation and Mapping





Unit 3 Excavation and Mapping





QUESTIONS?