August 30, 2010

MEMORANDUM: Jeff Cruz, Chief
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

FROM: Joseph Sebrosky, Senior Project Manager **/RA/**
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: TRIP REPORT – AUGUST 23 -24, 2010, GEOLOGY SITE VISIT IN SUPPORT OF THE V.C. SUMMER COMBINED LICENSE APPLICATION

This report summarizes the NRC site visit to the V.C. Summer Nuclear Station (VCSNS) Units 2 and 3 site and surrounding area during the period of August 23, and 24, 2010. The purpose of the site visit was to:

- View the excavation of VCSNS Unit 2 and determine if the observations made during the excavation are consistent with the geologic characterization of the site contained in Final Safety Analysis Report (FSAR) Section 2.5, "Geology, Seismology and Geotechnical Engineering," of the V.C. Summer Unit 2 and 3 combined license (COL) application.

- Review geologic mapping activities that have taken place during the excavation of the VCSNS Unit 2 Nuclear Island and ensure that they are consistent with commitments contained in VCSNS COL FSAR Section 2.5.

The attendance list for the site visit is provided in Enclosure 1. The agenda for the site visit is contained in Enclosure 2. Pictures of the Unit 2 Excavation are provided in Enclosure 3.

During the site visit South Carolina Electric and Gas (SCE&G) provided 3 presentations as follows:

- Geologic program overview (Enclosure 4)
- Excavation sequence, geologic mapping technical approach and data management (Enclosure 5)
- Preliminary geologic results and observations (Enclosure 6)

The presentations are available in the Agencywide Documents Access and Management System (ADAMS) under accession numbers ML102380456, ML102380460 and ML102380472, respectively. In some of the presentations pictures have been removed because SCE&G considers the pictures proprietary.

Highlights of the Site Visit

Observation of VCSNS Unit 2 Excavation

Figures 1 through 4 in Enclosure 3 are pictures taken by SCE&G that were provided to the staff prior to the site visit. These pictures show excavation activities from August 4, 2010, through August 6, 2010. Figures 1 through 4 show the rock units that were uncovered as the saprolite (soft rock layer above the hard rock) was removed.

The purpose of the staff's observation of the VCSNS Unit 2 excavation was to:

1) view the rock units that will ultimately serve as the foundation of the VCSNS Unit 2 safety structures, and

2) ensure that the uncovered rock is consistent with the description of the geologic features contained in VCSNS FSAR Section 2.5.

The rock units will have approximately 15 feet removed after examination in preparation for use as the foundation for the VCSNS Unit 2 nuclear island. The rock removal will be accomplished via blasting. The staff wanted to view the hard rock prior to blasting to look for evidence of faulting. Figure 5 of enclosure 3 shows a probable minor shear, and Figure 6 of enclosure 3 shows what appears to be an actual minor offset. The staff's view is that these geologic features are old and do not show any indication of recent shearing in the rock.

After viewing the Unit 2 excavation, the staff agrees with SCE&G that the features that have been uncovered are consistent with the geologic features described in VCSNS COL FSAR Section 2.5. The staff did not identify any features that would preclude blasting for VCSNS Unit 2 going forward. The staff indicated that it would like to visit the site again once the blasting is completed to view the foundation rock for the VCSNS Unit 2 nuclear island. SCE&G agreed to keep the staff informed of the schedule for the completion of the blasting for Unit 2. The staff also indicated that similar site visits would be scheduled for VCSNS Unit 3.

Review of Geologic Mapping Activities

The staff reviewed the SCE&G geologic mapping activities to ensure that it was performed in accordance with the commitments in VCSNS COL FSAR 2.5. Specifically, SCE&G committed to perform the geologic mapping activities in accordance with Regulatory Guide 1.208 "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," (Rev. 0, March 2007). The staff did not perform an inspection against the quality assurance requirements of 10 CFR Part 50, Appendix B, rather it performed a sample technical review of how the geologic mapping activities were performed.

The staff reviewed a sample of some of the geologic mapping that has been performed to date. The staff observed that the geologic mapping activities are consistent with RG 1.208 and captured any significant geologic features identified. The geologic mapping data was captured in a format that is retrievable and can be cross-referenced to the location of the observation.

Docket Nos.: 52-027 and 52-028

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(301) 415-1132

Enclosures:
As stated

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Docket Nos.: 52-027 and 52-028

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Enclosures:
As stated

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OFFICE	LA:NRO:DNRL:NWE1	DSER:RGS	PM:DNRL:NWE1
NAME	KGoldstein	GStirewalt	JSebrosky
DATE	08/27/10	08/30/10	08/27/10

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August 23-24, 2010 Site Visit to the Summer Unit 2 and Unit 3 Site
To View Unit 2 Excavation
Attendance List

Name	Organization
Christopher Cook*	NRC/NRO/DSER/RGS2
Gerry Stirewalt*	NRC/NRO/DSER/RGS2
Meralis Plaza-Toledo*	NRC/NRO/DSER/RGS1
Joe Sebrosky*	NRC/NRO/DNRL/NWE1
Mike Wentzel*	NRC/NRO/DNRL/NWE1
Rahshean Jackson*	NRC/RII/CCI/DCI
Mina Sheikh	NRC/RII/CCI/DCP/CPB4
David Ayers	NRC/RII/CCI/DCP/CPB4
Al Paglia	South Carolina Electric and Gas (SCE&G)
Amy Monroe*	SCE&G
Bob Whorton*	SCE&G
Kyle Young*	SCE&G
John Todd*	SCE&G
Julie Giles	SCE&G
April Rice	SCE&G
John Todd	SCE&G
Findlay Salter	SCE&G
Larry Cunningham	SCE&G
Brad Stokes	SCE&G
Alan Torres	SCE&G
Brad Tune	SCE&G
Robert Hoak	Shaw
Mark Glover	Shaw
George Srewett Jr.	Shaw
Gina Ferrugia*	Shaw
Matt Cooke*	Shaw
Nathan Cooke*	Shaw
Everett Washer*	Shaw
Jim Karmozyn	Shaw
Michael Goyda	Shaw
Michael Cain	Shaw
Jim Ahderseh	Shaw
David Marcelli	Shaw
Duane Carter	Shaw
Frank H. Syms*	William Lettis and Associates
Scott Lindvall*	William Lettis and Associates
Randy Cumbest*	William Lettis and Associates
Stephanie Briggs*	William Lettis and Associates

1. Attendance list reflects individuals that were present during the morning presentations on August 23, 2010
2. * denotes individuals present during all portions of the Agenda in Enclosure 2

Enclosure 1

NRC GEOLOGIC SITE VISIT AGENDA
AUGUST 23-24, 2010

MONDAY – AUGUST 23, 2010

TIME	PRESENTATION / ACTIVITY	LEAD
8:00	NRC Staff Arrival at SCE&G NND Office	
8:30	Welcome & Introductions – NND Logistics & Safety	SCE&G (A. Paglia, B. Whorton)
8:40	Agenda, Construction Safety Brief, Site Overview	SCE&G (B. Whorton, K. Young)
9:00	Geologic Program Overview • Program Outline, Technical Staff, Procedures & QA	Shaw (E. Washer)
9:15	Excavation Sequence, Geologic Mapping Technical Approach and Data Management • Mapping Reconnaissance Program • Pre-Excavation Trenching • Excavation Process and Wall Mapping • NI – Top of Rock Floor Mapping	Shaw (N. Cooke, M. Cooke)
9:45	BREAK	
10:00	Preliminary Geologic Results and Observations • Regional and Local Geologic Setting • Lithologic Age Relationships • Structural Age Relationships • Preliminary Observations and Conclusions • Demonstration of Final Products (Maps, GIS)	William Lettis & Associates (R. Cumbest)
11:15	LUNCH - NND Office	
12:00	Construction Site Tour	SCE&G (B. Whorton, K. Young)
1:00	Unit 2 – Excavation Walkdown / Evaluation	All
4:00	Return to NND Offices • Discussion on Preliminary Observations / Requests • Strategy/Logistics for Tuesday Visit	All

TUESDAY – AUGUST 24, 2010

TIME	PRESENTATION / ACTIVITY	LEAD
8:00	NRC Staff Arrival at SCE&G NND Office	
8:30	Unit 2 – Excavation Walkdown / Evaluation	All
12:00	LUNCH - NND Office	
1:00	Continuation of Technical Discussions	All
3:00	Concluding Remarks and NRC Observations / Recommendations	All

V.C. Summer Unit 2 Excavation Photos August 2010

Figure 1 – Unit 2 Excavation August 4, 2010 Looking West

Figure 2 – Unit 2 Excavation August 4, 2010 Looking North

Figure 3 – Unit 2 Excavation August 4, 2010 Looking North

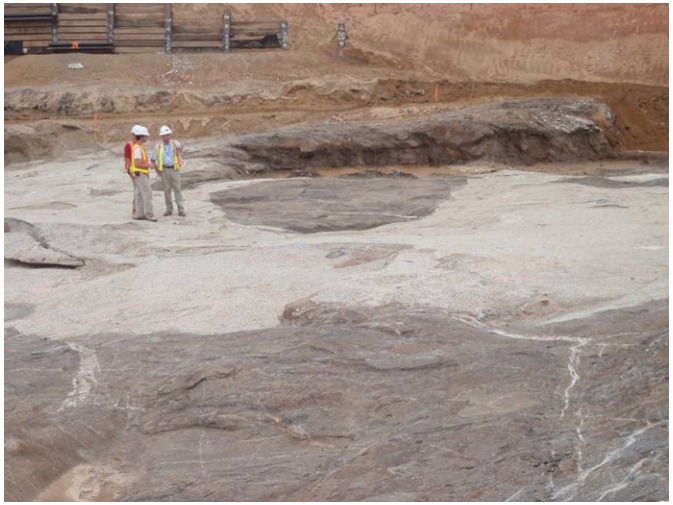

Figure 4 – Unit 2 Excavation August 6, 2010 Looking South West

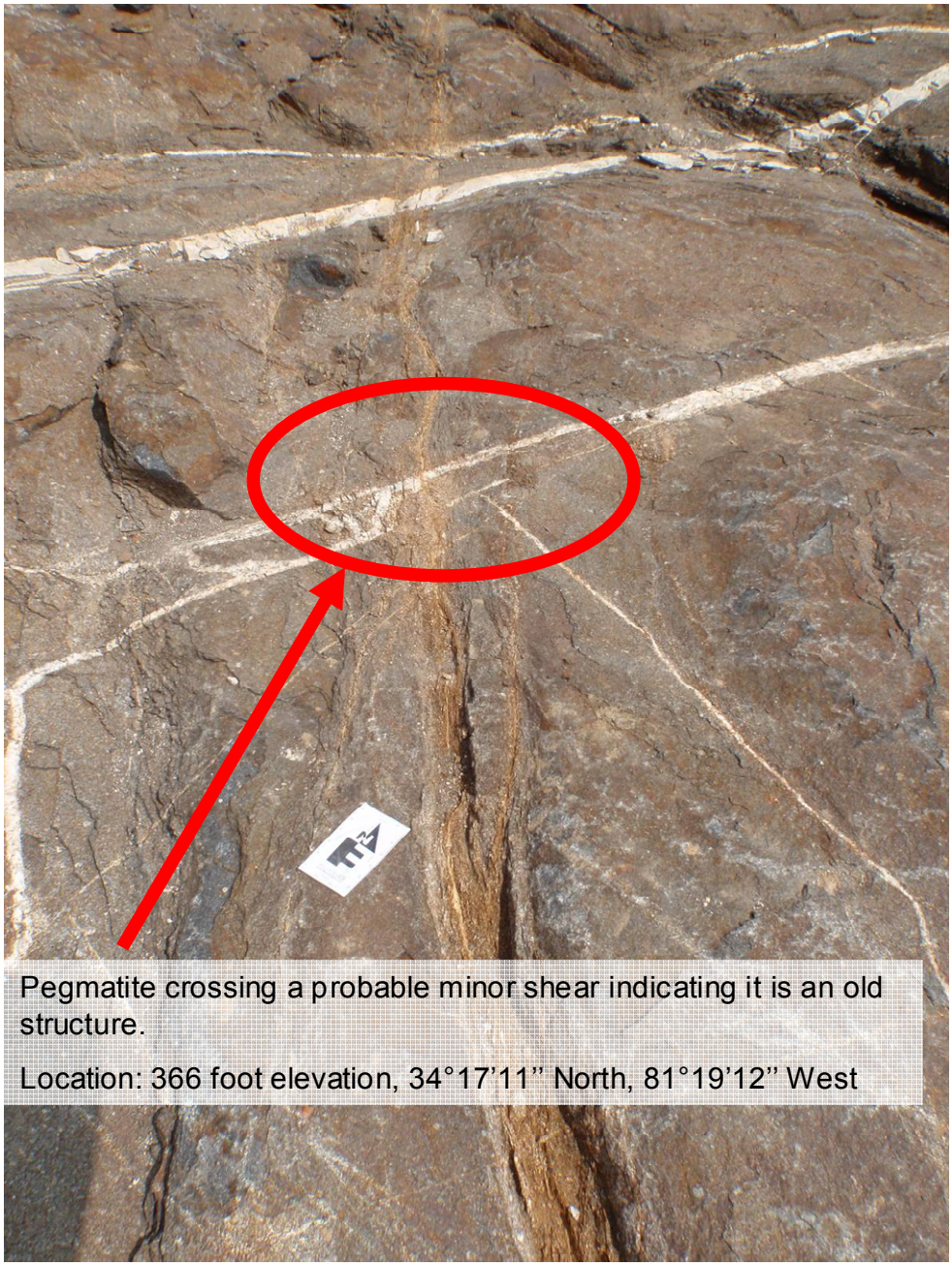

Figure 5 – Unit 2 Excavation Probable Minor Shear

Figure 6 – Unit 2 Excavation Minor Offset