January 27, 2014

Edward G. Wallace, Vice President
Regulatory Affairs
NuScale Power LLC
1100 NE Circle Blvd., Suite 350
Corvallis, OR 97330

SUBJECT: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT of SIET S.p.A. NO. 99901437/2013-201

Dear Mr. Wallace:

On December 9 through December 13, 2013, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the SIET S.p.A. (SIET) facilities in Piacenza, Italy. The purpose of this technically focused NRC inspection was to verify that NuScale Power LLC (NuScale) effectively implemented quality assurance (QA) processes and procedures for testing activities performed in support of the NuScale design certification application. The inspection focused on assessing compliance with the provisions of selected portions of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." The enclosed report presents the results of this inspection. This NRC inspection report does not constitute NRC endorsement of your overall QA and 10 CFR Part 21, "Reporting of Defects and Noncompliance," programs. Within the scope of this inspection, no violations or nonconformances were identified.

Sincerely,

Kerri A. Kavanagh, Chief **/RA/**
Quality Assurance Vendor Inspection Branch
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Project No.: 0769

Enclosure: Inspection Report No. 99901437/2013-201
and Attachment

Edward G. Wallace, Vice President
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NuScale Power LLC
1100 NE Circle Blvd., Suite 350
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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NEW REACTORS
DIVISION OF CONSTRUCTION INSPECTION AND
OPERATIONAL PROGRAMS
DESIGN CERTIFICATION TESTING INSPECTION REPORT

Project No.:	0769
Report No.:	99901437/2013-201
Applicant:	NuScale Power LLC 1100 NE Circle Blvd., Suite 350 Corvallis, OR 97330
Applicant Contact:	Mr. Steven Mirsky, P.E. Lead Licensing Engineer
Nuclear Industry Activity:	NuScale is developing and testing computer code design analysis software to support the design certification of their advanced light water reactor design. NuScale contracted the services of SIET S.p.A (SIET) for the simulation of Helical Coil Steam Generator performance over the expected range of reactor operating conditions. SIET has performed similar heat exchanger test bundle fabrication and testing for other reactor vendors.
Inspection Dates:	December 9 - 13, 2013

Inspectors:			
	Victor Hall	NRO/DCIP/QVIB	Team Leader
	Paul Prescott	NRO/DCIP/QVIB	
	James Gilmer	NRO/DSRA/SRSB	

Approved by: Kerri A. Kavanagh, Chief
Quality Assurance Vendor Inspection Branch
Division of Construction Inspection
and Operational Programs
Office of New Reactors

EXECUTIVE SUMMARY

NuScale Power LLC
Project No. 0769

The U.S. Nuclear Regulatory Commission (NRC) conducted this vendor inspection to verify that NuScale Power, LLC, (hereafter referred to as NuScale), and SIET S.p.A. (SIET) implemented an adequate quality assurance (QA) program in support of helical coil steam generator (HCSG) testing activities, that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, the NRC inspection also verified that SIET implemented a program that meets the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance." The NRC inspection team conducted the inspection at the at the SIET testing facility in Piacenza, Italy, from December 9 to December 13, 2013.

In January 2008, NuScale notified the NRC of its intent to begin the pre-application review process for its advanced reactor design. NuScale is developing and testing computer code design analysis software to support the design certification of their advanced light water reactor design. The design includes a first-of-a-kind HCSG for conversion of nuclear heat into process steam. For evaluation of the thermal-hydraulic response to loss of coolant accidents, NuScale plans to use the NRELAP5 code, which was developed based on the Idaho National Engineering Laboratory RELAP5-3D computer code. The RELAP5 code does not contain a validated HCSG model. Therefore, NuScale contracted the services of SIET for the simulation of HCSG performance over the expected range of reactor operating conditions. SIET has performed similar heat exchanger test bundle fabrication and testing for other reactor vendors. NuScale plans to collect test data over the entire range of expected operating conditions to benchmark the computer code predictions against actual measurements.

This technically focused inspection evaluated the implementation of SIET's QA policies and procedures for the design, fabrication, assembly, and testing for NuScale's HCSG test program. Specifically, NuScale's test plans aimed to:

- Size the steam generator inlet orifices so that sufficient stable steam generator operation is assured;
- Benchmark NuScale HCSG computer codes and models, and;
- Define steam outlet conditions as a function of primary and secondary system conditions and tube geometry.

Appendix B to 10 CFR Part 50 and 10 CFR Part 21 served as the bases for the NRC inspection. The inspectors used Inspection Procedure (IP) 35034, "Design Certification Testing Inspection," dated January 27, 2012; IP 35017, "Quality Assurance Implementation Inspection," dated July 29, 2008; IP43004, "Inspection of Commercial-Grade Dedication Programs," dated April 25, 2011; and IP 36100, "Inspection of 10 CFR Part 21 Programs for Reporting Defects and Nonconformance," dated February 13, 2012.

The NRC inspection team concluded that NuScale's and SIET's QA policies and procedures complied with the applicable requirements in 10 CFR Part 21 and Appendix B to 10 CFR Part 50. The NRC inspection team also concluded that SIET's personnel were implementing these policies and procedures effectively in support of NuScale's HCSG testing activities. The results of this inspection are summarized below.

10 CFR Part 21 Program

The NRC inspection team concluded that the implementation of SIET's 10 CFR Part 21 program was consistent with the regulatory requirements. Based on its review, the NRC inspection team determined that SIET was adequately implementing its policies and procedures in support of NuScale's HCSG testing activities. No findings of significance were identified.

Training and Qualification of Personnel

The NRC inspection team concluded that the implementation of SIET's training and qualification program was consistent with the regulatory requirements of Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

Oversight of Contracted Activities

The NRC inspection team concluded that NuScale and SIET invoked appropriate procurement requirements for HCSG testing activities, and maintained adequate oversight of contracted activities. The NRC inspection team also concluded that the implementation of NuScale's control of purchased material, equipment, and services program was consistent with the regulatory requirements of Criterion VII, "Control of Purchased Equipment, Material and Services," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

Test Control

The NRC inspectors concluded that the implementation of SIET's test control program was consistent with the regulatory requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50. The NRC inspection team determined that SIET was adequately implementing its test plan, procedures and configuration management, to ensure reliable test data collection. The NRC inspection team found that the test bundle material specifications and the fabrication process were adequate to ensure uniform power distribution and unobstructed flow pattern. The test apparatus and measurement equipment were appropriately selected for the expected range of flow, pressure, temperature, and power conditions that the HCSG will be subjected to. Finally, the NRC inspection team concluded that the design requirements were appropriately incorporated into the test specifications. No findings of significance were identified.

Control of Measuring and Test Equipment

The NRC inspectors concluded that the implementation of SIET's control of the measuring and test equipment program was consistent with the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. Based on its review, the NRC inspection team determined that SIET was adequately implementing its policies and procedures in support of NuScale's HCSG testing activities. No findings of significance were identified.

Corrective Actions and Nonconformances

The NRC inspection team concluded that SIET's program requirements and implementation of corrective action and nonconformance programs were consistent with the requirements of Criterion XV "Nonconforming Material, Parts, or Components," and Criterion XVI "Corrective Action," of Appendix B to 10 CFR Part 50. No findings of significance were identified.

REPORT DETAILS

1. 10 CFR Part 21 Program

   a. Inspection Scope

   The NRC inspection team reviewed SIET's QA manual, policies, and procedures that govern the evaluation program to determine compliance with *10 Code of Federal Regulations Part 21 (*10 CFR). The inspectors also reviewed SIET's procedures that govern corrective actions and the control and correction of nonconforming items to verify an adequate link to the 10 CFR Part 21 process. The NRC inspection team reviewed a sample of corrective action reports and nonconformance reports to verify that SIET was adequately screening issues for 10 CFR Part 21.

   The NRC inspection team also review the purchase orders (POs) issued by NuScale to SIET related to the HCSG testing to verify that procurement documents include testing requirements, qualification parameters, acceptance criteria, and applicability of 10 CFR Part 21, and Appendix B to 10 CFR Part 50.

   b. Observations and Findings

   No findings of significance were identified.

   c. Conclusions

   The NRC inspection team concluded that the implementation of SIET's 10 CFR Part 21 program was consistent with the regulatory requirements. Based on its review, the NRC inspection team determined that SIET was adequately implementing its policies and procedures in support of NuScale's HCSG testing activities. No findings of significance were identified.

2. Training and Qualification of Personnel

   a. Inspection Scope

   The NRC inspection team reviewed SIET's procedures to verify that SIET was implementing training activities in a manner consistent with regulatory requirements and industry standards. The NRC inspection team reviewed the training and qualification process for SIET's test personnel, as well as the training and qualification records of NuScale's personnel responsible for oversight of the ongoing HCSG testing to verify conformance with the requirements in Criterion II of Appendix B to 10 CFR Part 50. In addition, the NRC inspection team discussed the personnel training and qualification process with SIET's management, interviewed test personnel, and observed them during the performance of testing.

   b. Observations and Findings

   No findings of significance were identified.

   c. Conclusions

The NRC inspection team concluded that the implementation of SIET's training and qualification program was consistent with the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. No findings of significance were identified.

3. Oversight of Contracted Activities

a. Inspection Scope

The NRC inspection team reviewed the implementation of NuScale's and SIET's QA programs for control of purchased material, equipment, and services in support of NuScale's HCSG testing. Specifically, the NRC inspection team reviewed the policies and implementing procedures to verify compliance with the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50. In addition, the NRC inspection team discussed these programs with management and technical staff of NuScale and SIET.

The NRC inspection team reviewed the PO documents from NuScale to SIET developed to obtain HCSG test data. The NRC inspection team reviewed the associated project quality plans to verify that it appropriately stated the objectives of the test plans for developing data necessary for design certification. Finally the NRC inspection team verified that the PO appropriately required that the engineering and testing services be provided in accordance with SIET's QA program and project quality plan, which invoked the applicable requirements of NQA-1-2008 and the 2009 Addenda.

The NRC inspection team reviewed the external audits and surveillances of SIET, performed by NuScale, to ensure that the appropriate quality controls were in place to conduct the HCSG testing. The NRC inspection team also reviewed NuScale's corrective actions in response to an NRC Notice of Violation (NOV) related to NuScale's testing at Stern Laboratories for critical heat flux testing. This NOV was documented in NRC inspection report 99901418/2013-201. The NRC inspection team found that NuScale adequately addressed the NOV. This item is considered closed. Finally, the NRC inspection team reviewed a sample of SIET's internal audits to verify adequate implementation of SIET's audit program.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The NRC inspection team concluded that NuScale and SIET invoked appropriate procurement requirements for HCSG testing activities, and maintained adequate oversight of contracted activities. The NRC inspection team also concluded that the implementation of NuScale's control of purchased material, equipment, and services program was consistent with the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50. No findings of significance were identified.

4. Test Control

a. Inspection Scope

The NRC inspection team reviewed the implementation of NuScale's and SIET's QA program for test control in support of acquisition and use of HCSG test data to be used in the development of an evaluation model in support of the NuScale design certification. Specifically, the NRC inspection team reviewed: (1) the test plan, procedures and configuration management; (2) test results and data collection; (3) the test apparatus and measurement equipment; (4) the translation of design specification into test requirements; and, (5) the documentation and evaluation of test anomalies.

The NRC inspection team discussed the test control program with the NuScale and SIET management and technical staff, and observed testing activities being performed. The NRC inspection team focused on the policies and procedures governing the implementation of test control to verify compliance with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. The NRC inspection team evaluated the planning, preparation, and execution of the tests to ensure that they were, and that they provided reliable and repeatable data.

The NRC inspection team also reviewed the technical adequacy of the test setup. This included reviewing: (1) that the test coils adequately modeled the HCSG in the proposed reactor design; (2) that the test apparatus could provide thermal and hydraulic conditions expected for the proposed design; (3) that the instrument locations and types were appropriate for the thermal hydraulic data being measured; and, (4) that an appropriate number of test data points were collected.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The NRC inspectors concluded that the implementation of SIET's test control program was consistent with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. The NRC inspection team determined that SIET was adequately implementing its test plan, procedures and configuration management, to ensure reliable test data collection. The NRC inspection team found that the test bundle material specifications and the fabrication process were adequate to ensure uniform power distribution and unobstructed flow pattern. The test apparatus and measurement equipment were appropriately selected for the expected range of flow, pressure, temperature, and power conditions that the HCSG will be subjected to. Finally, the NRC inspection team concluded that the design requirements were appropriately incorporated into the test specifications. No findings of significance were identified.

5. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed the implementation of NuScale and SIET's QA program for the control of measuring and test equipment (M&TE) in support of NuScale's

HCSG testing activities. Specifically, the NRC inspection team reviewed the policies and procedures governing the implementation to verify compliance with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of calibration records for various M&TE and the audits used to accept calibration service suppliers. The NRC inspection team also verified that the M&TE program ensured that devices used in activities affecting quality were of the proper range, type, and accuracy to verify conformance to established requirements. In addition, the NRC inspection team also discussed control of the M&TE program with the management and technical staff of NuScale and SIET.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The NRC inspectors concluded that the implementation of SIET's control of the measuring and test equipment program was consistent with the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Based on its review, the NRC inspection team determined that SIET was adequately implementing its policies and procedures in support of NuScale's HCSG testing activities. No findings of significance were identified.

6. Corrective Actions and Nonconformances

a. Inspection Scope

The NRC inspection team reviewed SIET's QA manual, policies, and procedures that govern the implementation of SIET's corrective action and nonconformance programs, to ensure compliance with the requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of corrective action (CA) reports and nonconformance (NC) reports associated with the HCSG testing services to assess the effectiveness of the corrective action and nonconformance programs. As noted above, the NRC inspection team also reviewed NuScale's corrective actions in response to the NRC's inspection at Stern Laboratories.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The NRC inspection team concluded that SIET's program requirements and implementation of corrective action and nonconformance programs were consistent with the requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. No findings of significance were identified.

7. Exit Meeting

On December 13, 2013, the NRC inspection team presented the inspection results during an exit meeting with NuScale and SIET personnel.

ATTACHMENT

1. PERSONS CONTACTED

Name	Title	Affiliation	Entrance	Exit	Interviewed
Victor Hall	Inspection Team Leader, Reactor Operations Engineer	NRC	X	X	
Paul Prescott	Inspector, Senior Reactor Operations Engineer	NRC	X	X	
James Gilmer	Technical Expert, Reactor Systems Engineer	NRC		X	
Barbara Annoni	Translator	USA Consulate	X	X	
Kathryn Dunbar	Quality Assurance Engineer	NuScale	X	X	X
Robert Houser	Manager, Testing & Code Development	NuScale	X	X	X
Adam Rasmussen	Test Engineer	NuScale	X	X	X
Eric Young	Helical Coil Steam Generator Team Lead	NuScale	X	X	X
Mike Brasel*	Director Licensing	NuScale		X	
Thomas Mundy*	Vice President, Project Office	NuScale		X	
Jose Reyes*	Chief Technology Officer	NuScale		X	
Brian Wolf*	Code Development Engineer	NuScale		X	
Andrea Achilli	Production Manager	SIET	X		X
Stefano Botti	Senior Auditor	SIET	X	X	X
Gustavo Cattadori	Technical Director	SIET	X	X	X
Roberta Ferri	Project Leader	SIET	X	X	X
Stefano Gandolfi	Senior Engineer	SIET	X	X	X
Mauro Molinari	Quality Assurance Manager	SIET	X	X	X
Vittorio Fortunati	Laboratory Team Leader	SIET	X	X	X
Pietro Losi	Technician	SIET			X

* participated by conference call

2. INSPECTION PROCEDURES USED

Inspection Procedure 35034, "Design Certification Testing Inspection," dated January 27, 2010

Inspection Procedure 35017, "Quality Assurance Implementation Inspection," dated July 29, 2008

Inspection Procedure 43004, "Inspection of Commercial-Grade Dedication Programs," dated April 25, 2011

Inspection Procedure 36100, "Inspection of 10 CFR Part 21 Programs for Reporting Defects and Nonconformance," dated February 13, 2012

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
99901418/2013-201-01	Closed	NOV	Criterion VII

4. LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CA	Corrective Action
CFR	*Code of Federal Regulations*
DCIP	Division of Construction Inspection and Operational Programs
QVIB	Quality Assurance and Vendor Inspection Branch
HCSG	Helical Coil Steam Generator
IP	Inspection Procedure
M&TE	Measuring and Test Equipment
NC	Nonconformance
NOV	Notice of Violation
NRC	(U.S.) Nuclear Regulatory Commission
NRO	Office of New Reactors
PO	Purchase Order
QA	Quality Assurance
U.S.	United States (of America)

5. DOCUMENTS REVIEWED

Quality Manuals and Plans

SIET Quality Management System Manual, Revision 5, dated December 8, 2011

NuScale Quality Management Plan, Revision 1, dated February 13, 2013

SIET Helical Coil Steam Generator Test Program, Project Quality Plan, Revision 3, dated August 30, 2013

QA and Test Procedures and Documents

SIET Procedure No. 00027QQ06, “Procurement Process,” Revision 2, dated October 14, 2013

SIET Procedure No. 00002QQ92, “Documentation Management,” Revision 7, dated August 28, 2013

SIET Procedure No. 00018QQ02, “Management of Non Conforming Activities,” Revision 5, dated October 2, 2013

SIET Document 01998 PP 12, Revision 2, “SIET Helical Coil Steam Generator Test Program Electrically Heated Facility Test Procedures and Testing Plan”, September 2013

SIET Annex 8 “Checklist for the Tests – Diabatic Document 01998PP 12, Revision 3

SIET Document 00001QQ90, Revision 5, “Quality Management System Manual”, August 2011

SIET Document 01 828 RT 12, Revision 1, “SIET Helical Coil Steam Generator Test Program, Electrically Heated Test Facility Design”, August 2007

SIET Document 01 896 ST 12, Revision 2, “SIET Helical Coil Steam Generator Test Program, Technical Specifications for Electrically Heated Test Section Fabrication”, dated November 2012

SIET Quick Look Test Results, Job 1PNPSSGV00587 Helical Coil Steam Generator Test Program, dated November 20, 2013

SIET Quick Look Test Results, Job 1PNPSSGV00587 Helical Coil Steam Generator Test Program, dated December 11, 2013

SIET Plant Log, dated December 10, 2013

NuScale Power, NP-EP-1102, “Test Control”, Revision 0, dated June 2010

NuScale Power, NP-EP-1102-267, “Testing and Code Development”, Revision 2, dated October 2013

NuScale “Daily Test Review Record,” dated 12/9/2013, for Diabatic Steady State Test TD0002

NuScale “Milestone Test Review Checklist,” dated 11/8/2013 for TRR-1013-5109 for Test Series Identifier TFI (SDHxxxx, SDTxxxx, TAxxxx, TOxxxx)

Internal Audit Report Documents

SIET Procedure No. 00007QQ92, Revision 6, dated October 11, 2013

SIET Procedure "Qualification and Certification of Quality Audit Personnel," Revision 3, dated September 25, 2013.

SIET Internal Audit No. 02184VI13 – Internal NQA-1-2008/2009a, dated October 21, 2013

SIET Internal Audit No. 02137VI13 – Internal NQA-1-2008/2009a, dated September 13, 2013

SIET Internal Audit No. 02203VI13 – Internal Certification Testing Inspection, dated October 29, 2013,

NuScale Corrective Action Request (CAR) Documents

CAR No. NP-CA-0413-3512, dated April 10, 2013, documents deficiencies of failure by NuScale's supplier qualification process to adequately evaluate suppliers performing work affecting quality

CAR No. NP-CA-0413-3655, dated April 29, 2013, documents NRC finding from Inspection Report 99901418/2013-201 at Stern of NuScale's failure to provide objective evidence that Stern complied with procurement requirements prior to allowing Stern to initiate testing services and that Stern's Lead Auditor met qualification requirements for conducting internal audits and commercial grade surveys

NuScale Internal Memorandum ME-1013-5236, from K. Dunbar, QA Engineer, to D. Prigel, QA Director, "Supplemental Information for CAR NP-CA-0413-3512"

SIET Corrective Action (CA) Documents

SIET Procedure No. 00019QQ02, "Management of Corrective and Preventative Actions," Revision 3, dated October 4, 2013

CA 030, from Fluor's external audit finding No. 1, dated July 11, 2012. Closed on August 31, 2012, regarding PQP changes

CA 031, from Fluor's external audit finding No. 2, dated July 11, 2012. Closed on August 31, 2012, regarding NQA-1 edition reference

CA 032, from Fluor's external audit finding No. 3, dated July 11, 2012. Closed on October 15, 2013, regarding Lead Auditor Qualifications

CA 033, from Fluor's external audit finding No. 4, dated July 11, 2012. Closed on November 1, 2013, regarding the process for procuring commercial grade calibration services

CA 034, from Fluor's external audit finding No. 5, dated July 11, 2012. Closed on August 31, 2012, regarding PQP calibration requirements

CA 035, from Fluor's external audit finding No. 6, dated July 11, 2012. Closed on June 6, 2013, regarding procedures and process for control of documents for defining minor and major changes to documents

CA 040, regarding commercial grade dedication of shunt calibration at ARO company, dated February 13, 2013. Closed on November 5, 2013

CA 045, regarding multiple NCs regarding thermocouple malfunctions due to insufficient insulation resistance and electrical continuity, dated July 19, 2013. Closed on October 15, 2013

CA 054, regarding rewrite of "confusing" NC 048, dated November 18, 2013. Closed on November 20, 2013

Preventative Action PA 046, regarding review of previous NCs and CAs to classify them as CAQs and SCAQs, dated October 28, 2013. Closed on November 8, 2013

SIET NonConformance Documents

Procedure: 00018QQ02, "Management of Non Conforming Activities," Revision 5, dated October 2, 2013

SIET Nonconformance RPNC No. 019, dated February 10, 2013, regarding three thermocouples with inadequate insulation. Closed March 13, 2013

SIET Nonconformance RPNC No. 020, dated February 15, 2013, regarding tube thickness, analysis done to allow acceptance of tubes. Closed February 15, 2013

SIET Nonconformance RPNC No. 027, dated March 22, 2013, regarding inlet (feed-water) piping differences from the design drawing. Closed July 17, 2013

SIET Nonconformance RPNC No. 032, dated May 13, 2013, regarding calculated uncertainties of pressure instruments indicated in a report. Closed July 19, 2013

SIET Nonconformance RPNC No. 033, dated May 13, 2013, regarding the use of a swage nipple instead of concentric reducer. Closed May 13, 2013

SIET Nonconformance RPNC No. 038, dated May 17, 2013, regarding a thermocouple that was reading incorrectly. Closed July 19, 2013

SIET Nonconformance RPNC No. 040, dated June 19, 2013, regarding the use of valves in the test facility different than originally designed. Closed July 16, 2013

SIET Nonconformance RPNC No. 041, dated July 9, 2013, regarding a pressure tap location for a fast dynamic pressure transducer in the incorrect location. Closed July 16, 2013

SIET Nonconformance RPNC No. 042, dated June 25, 2013, regarding orifice plates not conforming to design drawing specifications. Closed July 16, 2013

SIET Nonconformance RPNC No. 043, dated July 24, 2013, regarding the linear position of thermocouples and one pressure tap not being consistent with the design. Closed July 24, 2013

SIET Nonconformance RPNC No. 048, dated October 28, 2013, regarding 13 thermocouples that were grounding out due to poor insulation. Closed November 15, 2013

SIET Nonconformance RPNC No. 049, dated October 28, 2013, is the same non-conformance as 048, but was re-written to clarify the report, in response to CA 054. Closed November 15, 2013

SIET Deviation Form N.2, dated November 8, 2013.

SIET Deviation Form N.10, dated November 27, 2013.

SIET Deviation Form N.11, dated November 28, 2013.

SIET Deviation Form N.12, dated November 29, 2013

Procurement Control and External Audit Documents

NuScale Power, NP-SW-0911-019, "NuScale Task Order Revision", Revision 8, dated July 2013

NuScale Task Order Revision, NP-SW-0911-019, Revision 8, dated August 2013

NuScale Audit No. NP-A2-0813-3449 of SIET, dated November 11, 2013

NuScale "Audit Process," NP-QP-1802-272, Revision 2, dated July 17, 2013

Fluor Audit No. CORP-AE-12-7 of SIET, dated May 25, 2012

NuScale "Supplier Evaluation and Qualification," NP-QP-0703, Revision 2, dated November 5, 2013

NuScale "Desktop Surveillance Checklist/Report," for SIET, No. SI-1013-5115 dated Octover 14, 2013

NuScale "Supplier Evaluation," for SIET, No. NP-TRP-0513-3785, dated May 13, 2013

NuScale Attachment 1, "SIET Helical Coil Steam Generator Test Program, Revision 8, dated 7/15/2013, documents NuScale's review of SIET's corrective actions from the May 13, 2013 "Onsite Supplier Evaluation Transmittal Letter"

Training and Qualification Records

SIET Qualification Certificate Document No. 5/2013, Certification Date October 30, 2013, for Andrea Achilli; Title: Production Responsible; Scope of Activities: Global responsibility of coordinating and supervising all the technical project activities related to the Helical Steam Generator Test Program (Test Facility 1&2)

SIET Qualification Certificate Document No. 10/2013, Certification Date October 22, 2013, for Federica Bassenghi; Title: Test Facility Technician; Scope of Activities: Carrying out the individual phases and actions connected with the test activities related to the Helical Steam Generator Test Program (Test Facility 1&2)

SIET Qualification Certificate Document No. 2/2013, Certification Date October 22, 2013, for DePace Orlando; Title: Facility Technician; Scope of Activities: Carrying out individual phases and actions connected with the test activities related to the Helical Steam Generator Test Program (Test Facility 1)

SIET Qualification Certificate Document No. 3/2012, Certification Date October 22, 2013,for Gandolfi Stefano; Title: OPR & IEC Team Leader; Scope of Activities: Carrying out the individual phases and actions connected with the instrumentation and test activities related to the Helical Steam Generator Test Program (Test Facility 1)

NuScale Power "Lead Auditor Qualification Record," for Kathryn Dunbar, Lead Auditor

NuScale Power "Individual Training Plan and Record," for Robert J. Houser, Test and Code Development Manager

NuScale Power "Individual Training Plan and Record," for Eric P. Young, Test Engineer

NuScale Power "Individual Training Plan and Record," for Adam R. Rasmussen, Test Engineer

SIET "Welder Approval Test Certificate," No. MIL-13-A-63 for Emanuele Bianchessi

Measurement and Test Equipment

SIET Certificate of Calibration for Thermocouple, Serial No. S16490; Date of issue: January 30, 2013

SIET Certificate of Calibration for Thermocouple, Serial No. S16488; Date of issue: January 30, 2013

SIET Certificate of Calibration for Thermocouple, Serial No. S16992; Date of issue May 2, 2013

SIET Certificate of Calibration for Thermocouple, Serial No. S16989; Date of issue: May 2, 2013

SIET Certificate of Calibration for Differential Pressure Transmitter (low span), Serial No. S16598; Date of issue: February 22, 2013

SIET Certificate of Calibration for Differential Pressure Transmitter (high span), Serial No. S16598; Date of issue: February 22, 2013

SIET Certificate of Calibration for Pressure Transmitter, Serial No. S16580; Date of issue: February 15, 2013

SIET Certificate of Calibration for Pressure Transmitter Calibration Meter (high side), Certification No. 096PO156-2013; Date of issue: May 30, 2013

SIET Certificate of Calibration for Pressure Transmitter Calibration Meter (low side), Certification No. 096PO155-2013; Date of issue: May 30, 2013

SIET Certificate of Calibration for Thermocouple Reservoir (50°C - 150°C), Serial No. S5128; Date of issue: October 6, 2012

SIET Certificate of Calibration for Thermocouple Reservoir (150°C - 275°C), Serial No. S5129; Date of issue: January 14, 2013

SIET Certificate of Calibration for Thermocouple Reservoir (275°C - 300°C), Serial No. S5131; Date of issue: October 6, 2012

SIET Certificate of Calibration for Thermocouple Data Acquisition System (DAS), Serial No. CSD019; Date of issue: February 26, 2013

SIET Certificate of Calibration for Digital Micrometer (for orifice plates), Certification No. CPE024; Date of issue: March 25, 2013

SIET Accreditation Certificate from the Italian Accreditation Body, Accredia, Accreditation No. 096, Revision 10 to EN ISO/IEC 17025:2005, "General Requirements for the Competence of Testing and Calibration Laboratories," (Pressure and Temperature), Issue Date: July 4, 2013, Expiration Date: March 4, 2017

SIET Accreditation Certificate from the Italian Accreditation Body, Accredia, Accreditation No. 046, Revision 11 to EN ISO/IEC 17025:2005, "General Requirements for the Competence of Testing and Calibration Laboratories," (Electrical Instrumentation and Fluke), Issue Date: March 22, 2011, Expiration Date: October 29, 2014

SIET Procedure No. 0003QQ92, "Management of Measuring Equipment," Revision 7, dated July 10, 2009

Commercial-Grade Dedication Documents

SIET "Dedication Plan for CGI Calibration," CG Dedication No. 1, Revision 0, dated March 20, 2013, for dedication of Calibration Service for Coriolis meter S14828, model Endress+Hauser PROMASS 80 M DN08, calibrated by Danish Technological Institute for PO #437-12, dated December 12, 2012

SIET "Dedication Plan for CGI Calibration," CG Dedication No. 2, Revision 0, dated March 20, 2013, for dedication of Calibration Service for IME Shunt DER100C800, DER100D120, DER100D200, DER100D250, ARO s.r.l. Monza, Italy for PO #430-12, dated December 7, 2012

SIET "Source Surveillance Checklist/Report," for ARO s.r.l., No. 1PNPSSGV00587, dated April 2, 2013

SIET Procedure No. 01970 IO 12, "Commercial Grade Dedication for Calibration Services," Revision 3, dated July 31, 2013

Welding Documents

SIET Radiographic Test Report No. 737/12 for 3 butt welds of SS304 tubing (N4, N5, and N6)

SIET “Welding Procedure Qualification Record,” Certificate No. MIL-13-B-023

SIET “Welding Procedure Specification,” No. 103E, Revision 0, dated November 26, 2012