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March 30, 2015
NND-15-0199

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Subject: Virgil C. Summer Nuclear Station Units 2 and 3
Docket Numbers 52-027 and 52-028
Request for a Commission-Approved Simulation Facility – Revision 1

Reference: Letter NND-15-0026, "Request for a Commission-Approved Simulation Facility," dated January 16, 2015

Pursuant to 10 CFR 55.46(b), South Carolina Electric & Gas Company (SCE&G) hereby submits the attached revision to a request for a Commission-Approved Simulation Facility for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 (Reference). The enclosure provides information required by 10 CFR 55.46(b) for facility licensees that propose use of a simulation facility other than a plant-referenced simulator in the administration of operating tests under 10 CFR 55.45(b)(1) or 55.45(b)(3). The enclosure also addresses draft Requests for Additional Information discussed with the Nuclear Regulatory Commission during a Public Meeting held on March 19, 2015. Note that the enclosure summarizes vendor and site-specific testing performed. This information is available for NRC review during inspections/audits.

This letter contains no regulatory commitments.

If there are any questions regarding this request, please contact me by telephone at (803) 941-9858, or by email at arice@scana.com.

Sincerely,

April Rice
Manager, Nuclear Licensing
New Nuclear Deployment

AR/gs

Enclosure

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South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station Units 2 and 3

NND-15-0199

Enclosure

Information Provided Pursuant to a 10 CFR 55.46(b) Request for a Commission-Approved Simulation Facility for Virgil C. Summer Nuclear Station Units 2 and 3

Revision 1

**Information Provided Pursuant to a 10 CFR 55.46(b)
Request for a Commission-Approved Simulation Facility
for Virgil C. Summer Nuclear Station Units 2 and 3**

Revision 1

1.0 Introduction

Part 55 of the NRC Regulations (10 CFR) provides the provisions and requirements of Operator Licenses. Subpart E – Written Examinations and Operating Tests, part 55.46 – Simulation Facilities, provides the requirements for the Simulation facility used for conducting Operator License Exams. Within this subpart, there are two types of simulator described: (1) a Commission-Approved Simulation Facility and (2) a Plant-Referenced Simulator.

Regulation 10 CFR 55.46(b) states:

Commission-approved simulation facilities and Commission approval of use of the plant in the administration of the operating test. (1) Facility licensees that propose to use a simulation facility, other than a plant-referenced simulator, or the plant in the administration of the operating test under §§ 55.45(b)(1) or 55.45(b)(3), shall request approval from the Commission. This request must include:

(i) A description of the components of the simulation facility intended to be used, or the way the plant would be used for each part of the operating test, unless previously approved; and

(ii) A description of the performance tests for the simulation facility as part of the request, and the results of these tests; and

(iii) A description of the procedures for maintaining examination and test integrity consistent with the requirements of § 55.49.

This document provides information required under the regulations in support of a request for a Commission-Approved Simulation Facility for Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3. Note that this document summarizes vendor and site-specific testing performed. This information is available for NRC review during inspections/audits.

2.0 Description of the Components of the Simulation Facility Intended to be Used for Each Part of the Operating Test [10 CFR 55.46(b)(1)(i)]

The South Carolina Electric & Gas Company (SCE&G) V. C. Summer (VCS) Units 2 and 3 simulation facility is comprised of two AP1000 full scope simulators, designated

2A and 2B. The simulators are referenced to Unit 2 and meet the requirements of ANSI/ANS-3.5-1998, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations," as endorsed by Regulatory Guide 1.149, Revision 3. ANSI/ANS-3.5-1998 establishes the functional requirements for full scope nuclear power plant control room simulators used for operator training and examination.

The following provides a description of the components of the simulation facility.

Functional Description of the VCS simulators

Instructor-controlled normal plant evolutions, system malfunctions, component level failures (CLFs) and local operator actions (LOAs) are used to provide simulated plant performance and failure or degradation of simulated plant systems or equipment. To achieve this level of functionality plant systems listed in Table 1 are simulated to support training and examination.

Table 1

List of Plant Systems Simulated

System Code	System Title
ASS	Auxiliary Steam Supply
BDS	Steam Generator Blowdown System
CAS	Compressed and Instrument Air System
CCS	Component Cooling Water System
CDS	Condensate System
CES	Condenser Tube Cleaning System
CFS	Turbine Island Chemical Feed System
CMS	Condenser Air Removal System
CNS	Containment System
CPS	Condensate Polishing System
CVS	Chemical and Volume Control System
CWS	Circulating Water System
DAS	Diverse Actuation System
DDS	Data Display and Processing System
DFS	Diesel Fuel Offloading System
DOS	Standby Diesel and Auxiliary Boiler Fuel Oil System
DRS	Storm Drain System
DTS	Demineralized Water Treatment System
DWS	Demineralized Water Transfer and Storage System
ECS	Main AC Power System
EDS	Non Class 1E DC and UPS System
EHS	Special Process Heat Tracing System
ELS	Plant Lighting System
FPS	Fire Protection System

System Code	System Title
FWS	Main and Startup Feedwater System
GSS	Gland Seal System
HCS	Generator Hydrogen and CO2 System
HDS	Heater Drain System
HSS	Hydrogen Seal Oil System
IDS	Class 1E DC and UPS System
IIS	Incore Instrumentation System
LOS	Main Turbine and Generator Lube Oil System
MES	Meteorological and Environmental Monitoring System
MHS	Mechanical Handling System
MSS	Main Steam System
MTS	Main Turbine System
OCS	Operation and Control Centers System
OWS	Offsite Water Treatment System
PCS	Passive Containment Cooling System
PGS	Plant Gas System
PLS	Plant Control System Including subsystems: • (DRCS) Digital Rod Control System • (DRPI) Digital Rod Position Indication • (TCPS) Turbine Control and Protection System
PMS	Protection and Safety Monitoring System
PSS	Primary Sampling System
PWS	Potable Water System
PXS	Passive Core Cooling System
RCS	Reactor Coolant System
RMS	Radiation Monitoring System
RNS	Normal Residual Heat Removal System
RWS	Raw Water System
RXS	Reactor System
SDS	Sanitary Drainage System
SFS	Spent Fuel Pool Cooling System
SGS	Steam Generator System
SJS	Seismic Monitoring System
SMS	Special Monitoring System
SSS	Secondary Sampling System
SWS	Service Water System
TCS	Turbine Building Closed Cooling Water System
TDS	Turbine Island Vents, Drains and Relief System
TOS	Main Turbine Control and Diagnostic System
VAS	Radiologically Controlled Area Ventilation System
VBS	Nuclear Island Nonradioactive Ventilation System
VCS	Containment Recirculation Cooling System
VES	Main Control Room Emergency Habitability System
VFS	Containment Air Filtration System

System Code	System Title
VHS	Health Physics and Hot Machine Shop HVAC System
VLS	Containment Hydrogen Control System
VRS	Radwaste Building HVAC System
VTS	Turbine Building Ventilation System
VUS	Containment Leak Rate Test System
VWS	Central Chilled Water System
VXS	Annex/Aux Building Nonradioactive Ventilation System
VYS	Hot Water Heating System
VZS	Diesel Generator Building Heating and Ventilation System
WGS	Gaseous Radwaste System
WLS	Liquid Radwaste System
WRS	Radioactive Waste Drain System
WSS	Solid Radwaste System
WWS	Waste Water System
ZAS	Main Generation System
ZBS	Transmission Switchyard and Offsite Power System
ZOS	Onsite Standby Power System
ZVS	Excitation and Voltage Regulation System

NRC Operating Tests

The content of NRC Operating Tests are described in 10 CFR 55.45(a)(1) through (13). This section provides a list from which items will be sampled to construct the NRC examination. Outstanding Simulator issues are identified from diverse sources, such as Factory Acceptance Testing (FAT), Westinghouse pre-ISV activities, Site Acceptance Testing (SAT), Site ANS/ANSI 3.5 testing, and issues identified at the similar facility at Vogtle 3 and 4. These items are evaluated and considered in accordance with site processes, then added to the Simulator Discrepancy Report. For those items that meet the screening criteria, additional evaluation is conducted using a Training Needs Assessment and Training Needs Analysis.

The following information describes how the VCS simulators support the content described in 10 CFR 55.45(a)(1) through (13), and how the items identified for Training Needs Analysis affect these criteria:

(1) Perform pre-startup procedures for the facility, including operating of those controls associated with plant equipment that could affect reactivity.

The VCS simulators provide the ability to exercise the General Operating Procedures from Mode 6 through Mode 2. This is validated by Site Acceptance Testing (SAT) and Operations Training scenarios. The SAT testing that demonstrated this functionality are listed and discussed in more

detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.” The training scenarios referenced are:

- AP2-LT-ST-GOP-302_307
- AP2-LT-ST-GOP-303_304

(2) Manipulate the console controls as required to operate the facility between shutdown and designated power levels.

The VCS simulators provide the ability to exercise the General Operating Procedures from Mode 1, 100% power through Mode 6. This is validated by SAT and achievement of objectives contained in Operations Training scenarios that exercise moving the plant through all modes. The SAT testing that demonstrated this functionality are listed and discussed in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.” The training scenarios referenced are:

- AP2-LT-ST-GOP-101
- AP2-LT-ST-GOP-202_205
- AP2-LT-ST-GOP-302_307
- AP2-LT-ST-GOP-303_304
- AP2-LT-ST-GOP-306

(3) Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.

The VCS simulators provide the component status indications, system parameter trending capabilities, and Alarm Presentation System used in design Baseline 7. These indications allow the operator to take remedial actions where appropriate. Alarms are presented to the operator using a hierarchy: Red, Orange, Yellow, and Green. The alarm board also groups the alarms using two overlapping methods: by Plant System and using larger summary tiles. This allows the operator to quickly see that (for example) the Reactor Coolant System has a red alarm, and that the alarm also resulted in reactor trip. In addition, Operations rules of usage are established that set expectations for addressing alarms in order of priority: Red (Priority 1), Orange (Priority 2), etc. The Emergency Operating Procedures (EOP) / Abnormal Operating Procedures (AOP) Users Guide further sets priorities such that EOP procedure are addressed prior to AOPs, and that AOP procedures are addressed prior to Alarm Response Procedures (ARPs).

Functionality of the Alarms presented to the Operators is also verified during the ANS/ANSI 3.5 testing of the simulators. This process assesses both the overall alarm functionality during the tests, and an independent review of the

alarm data file by two SRO Certified individuals and the Simulator Operations Specialist after completion of each test.

(4) Identify the instrumentation systems and the significance of facility instrument readings.

The VCS simulators provide the same system instrumentation readings as used in design Baseline 7. The simulators provide the ability to override and/or fault multiple instrumentation outputs for the student to evaluate the significance of those instrument readings.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(5) Observe and safely control the operating behavior characteristics of the facility.

The VCS simulators support operator actions that provide integrated plant operating response over a range of conditions.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(6) Perform control manipulations required to obtain desired operating results during normal, abnormal, and emergency situations.

The VCS simulators provide the ability to exercise the system control functions during the implementation of the General Operating Procedures (GOPs), Standard Operating Procedures (SOPs), Abnormal Operating Procedures (AOPs), and Emergency Operating Procedures (EOPs).

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(7) Safely operate the facility's heat removal systems, including primary coolant, emergency coolant, and decay heat removal systems, and identify the relations of the proper operation of these systems to the operation of the facility.

The VCS simulators provide the ability to operate the plant systems used in design Baseline 7 which provide normal and emergency plant heat removal.

Simulator integrated thermal-hydraulic response enables the operator to gain experience with these functions.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(8) Safely operate the facility's auxiliary and emergency systems, including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.

The VCS simulators provide the ability to exercise the plant systems listed in Table 1 to monitor and control the plant, as used in design Baseline 7, through normal and off-normal plant conditions.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(9) Demonstrate or describe the use and function of the facility's radiation monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.

The VCS simulators include modeling of the Radiation Monitoring System, including its interface with other plant systems.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

Portable survey instruments and personnel monitoring equipment are outside the scope of simulation.

(10) Demonstrate knowledge of significant radiation hazards, including permissible levels in excess of those authorized, and ability to perform other procedures to reduce excessive levels of radiation and to guard against personnel exposure.

The VCS simulators model radiation transport that enables the operator to identify and take actions to reduce excessive radiation levels using design Baseline 7 procedures.

This functionality was demonstrated throughout the SAT/ANS/ANSI 3.5 testing conducted on the simulator(s) and is described in more detail in the next section of this document titled, “Control Manipulations and Plant Evolutions.”

(11) Demonstrate knowledge of the emergency plan for the facility, including, as appropriate, the operator's or senior operator's responsibility to decide whether the plan should be executed and the duties under the plan assigned.

The VCS simulators enable the operator to demonstrate emergency plan knowledge through the use of design Baseline 7 procedures. Draft emergency plan procedures are currently being used for licensed operator training and program simulator demonstrative exams.

(12) Demonstrate the knowledge and ability as appropriate to the assigned position to assume the responsibilities associated with the safe operation of the facility.

The VCS simulators provide suitable functionality to instruct and enable the evaluation of control room operators in their role during normal and emergency plant operations. This is validated by the current use of the simulator to conduct License Operator program simulator demonstrative exams as described in site procedures VCS-TQP-0801A, “Initial License Operator (ILO) Training Curriculum (Cold License).” These demonstrative exams are evaluated using the site process in VCS-TQP-0414, “Conduct of Simulator Training and Evaluation.”

(13) Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

The VCS simulators support the ability to evaluate individual candidates and operating crews during the performance of program exams and regulatory exams, as described in part (12) above.

Some procedure issues were identified during the performance of ISV. These issues were evaluated by the VCS staff and changes made to correct the issues. Sluggish response of Computerized Procedure System (CPS) was noted during some ISV scenarios, which has been linked to the use of automatic opening of procedures used at the WEC simulator. Automatic opening is not used at VCS, and no issues associated with sluggish CPS response are evident on site. Selection of the appropriate procedure to enter is a normal SRO work function at this site, as is consistent with existing operating plants.

VCS has developed and validated the operating exam Simulator Demonstrative scenarios portion of an NRC exam scheduled for May of this year, as well as a Company administered Audit exam covering an equivalent scope. The required number of scenarios to implement these exams were developed in full compliance with NUREG 1021, revision 10 without requiring any process or procedure changes to the exam development based on any known simulator limitations. The exam contents have been provided to the appropriate NRC staff involved with operator licensing during the development stages, and has been submitted for approval in accordance with NUREG 1021. Details of the scope and contents of the exam are not provided here to protect the integrity of the exam, but are available for NRC inspection.

Control Manipulations and Plant Evolutions

10 CFR 55.59(c)(3)(i) identifies certain control manipulations and plant evolutions that must be performed by licensed operators. Each element of 10 CFR 55.59(c)(3)(i) is addressed below:

(A) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0001, AP-OPS-EVO-002.

AP-OPS-EVO-002 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-63
- VC-TO-64

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

(B) Plant shutdown.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0001, AP-OPS-EVO-004.

AP-OPS-EVO-004 - Passed with no discrepancies.

(C) Manual control of steam generators or feedwater or both during startup and shutdown.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0001, AP-OPS-EVO-002.

AP-OPS-EVO-002 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-63
- VC-TO-64

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

(D) Boration or dilution during power operation.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0001, AP-OPS-EVO-002 (dilution) and VC2-IST-0001, AP-OPS-EVO-004 (boration).

AP-OPS-EVO-002 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-63
- VC-TO-64

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

AP-OPS-EVO-004 - Passed with no discrepancies.

(E) Significant (≥10 percent) power changes in manual rod control or recirculation flow.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0001, AP-OPS-EVO-002.

AP-OPS-EVO-002 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-63
- VC-TO-64

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

(F) Reactor power change of 10 percent or greater where load change is performed with load limit control or where flux, temperature, or speed control is on manual (for HTGR).

The ability of the simulator to perform reactor power change of 10 percent or greater where load change is performed with load limit (turbine) control is verified in the following site acceptance tests:

VC2-IST-0001, AP-OPS-EVO-002
VC2-IST-0001, AP-OPS-EVO-003
VC2-IST-0001, AP-OPS-EVO-004
VC2-IST-0001, AP-OPS-T-007

AP-OPS-EVO-002 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-63
- VC-TO-64

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

AP-OPS-EVO-003 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-67
- VC-TO-82
- VC-TO-83
- VC-TO-89
- VC-TO-90

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-TO-67
- VC-TO-82
- VC-TO-83

AP-OPS-EVO-004 - Passed with no discrepancies.

AP-OPS-T-007 - Passed with discrepancies. The following SDRs were generated:

- VC-1502-10

- VC-1502-11

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1502-10
- VC-1502-11

Operating characteristics specific to an HTGR are not applicable for an AP1000 design.

(G) Loss of coolant, including —

(1) Significant PWR steam generator leaks

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-01-1.

AP-MALF-01-1 - Passed with no discrepancies.

(2) Inside and outside primary containment

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-01-3 and AP-MALF-01-2.

AP-MALF-01-3 - Passed with no discrepancies.

AP-MALF-01-2 - Passed with discrepancies. The following SDRs were generated:

- VC-1411-12
- VC-1501-02

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

(3) Large and small, including leak-rate determination

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-01-3 and AP-MALF-01-4.

AP-MALF-01-3 - Passed with no discrepancies.

AP-MALF-01-4 - Passed with no discrepancies.

(4) Saturated reactor coolant response (PWR).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-01-5.

AP-MALF-01-5 - Passed with discrepancies. The following SDRs were generated:

- VC-1502-12

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1502-12

(H) Loss of instrument air (if simulated plant specific).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-02-1.

AP-MALF-02-1 - Passed with discrepancies. The following SDRs were generated:

- VC-1411-14

Training Needs Assessment screening was performed and no Training Needs Analysis was deemed necessary.

(I) Loss of electrical power (or degraded power sources).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-03-1 to AP-MALF-03-35.

AP-MALF-03-1 to AP-MALF-03-35 – All Tests Passed; some with discrepancies. The following SDRs were generated:

- VC-TO-08
- VC-TO-45
- VC-TO-71
- VC-TO-75
- VC-TO-76
- VC-TO-77
- VC-1501-03

- VC-1501-04
- VC-1501-06
- VC-1501-08

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-TO-75
- VC-TO-76

(J) Loss of core coolant flow/natural circulation.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-04-3.

AP-MALF-04-3 - Passed with no discrepancies.

(K) Loss of feedwater (normal and emergency).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-10-1.

AP-MALF-10-1- Passed with discrepancies. The following SDRs were generated:

- VC-1502-04
- VC-1502-14

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1502-14

(L) Loss of service water, if required for safety.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-06-1.

AP-MALF-06-1 - Passed with no discrepancies..

(M) Loss of shutdown cooling.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-07-1.

AP-MALF-07-1 - Passed with no discrepancies.

(N) Loss of component cooling system or cooling to an individual component.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-08-1.

AP-MALF-08-1 - Passed with no discrepancies.

(O) Loss of normal feedwater or normal feedwater system failure.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-09-1.

AP-MALF-09-1 - Passed with no discrepancies.

(P) Loss of condenser vacuum.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-05-1.

AP-MALF-05-1 - Passed with no discrepancies.

(Q) Loss of protective system channel.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-11-1 to AP-MALF-11-3.

AP-MALF-11-1 to AP-MALF-11-3 – All passed with no discrepancies.

(R) Mispositioned control rod or rods (or rod drops).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-12-1 to AP-MALF-12-4.

AP-MALF-12-1 to AP-MALF-12-4 – All passed with no discrepancies.

(S) Inability to drive control rods.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-13-1.

AP-MALF-13-1 - Passed with no discrepancies.

(T) Conditions requiring use of emergency boration or standby liquid control system.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-24-3.

AP-MALF-24-3 - Passed with discrepancies. The following SDRs were generated:

- VC-TO-47
- VC-1502-14

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-TO-47
- VC-1502-14

(U) Fuel cladding failure or high activity in reactor coolant or offgas.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-14-1.

AP-MALF-14-1 - Passed with no discrepancies.

(V) Turbine or generator trip.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-15-1 and AP-MALF-16-1.

AP-MALF-15-1 - Passed with discrepancies. The following SDRs were generated:

- VC-1410-7

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1410-7

AP-MALF-16-1 - Passed with discrepancies. The following SDRs were generated:

- VC-1502-13

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1502-13

(W) Malfunction of an automatic control system that affects reactivity.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-17-1 to AP-MALF-17-4,

AP-MALF-17-1 to AP-MALF-17-4 – All passed with no discrepancies.

(X) Malfunction of reactor coolant pressure/volume control system.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-18-1 to AP-MALF-18-3.

AP-MALF-18-1 to AP-MALF-18-3 – All passed with no discrepancies.

(Y) Reactor trip.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-19-1.

AP-MALF-19-1 - Passed with no discrepancies.

(Z) Main steam line break (inside or outside containment).

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-20-4 and AP-MALF-20-1.

AP-MALF-20-4 - Passed with no discrepancies.

AP-MALF-20-1- Passed with discrepancies. The following SDRs were generated:

- VC-TO-46
- VC-1502-11
- VC-1502-15

Training Needs Assessment screening was performed and Training Needs Analysis was deemed necessary and completed for the following:

- VC-1502-11
- VC-1502-15.

(AA) A nuclear instrumentation failure.

The ability of the simulator to perform this evolution is verified in site acceptance test VC2-IST-0002, AP-MALF-21-1 to AP-MALF-21-3.

AP-MALF-21-1 to AP-MALF-21-3 – All passed with no discrepancies.

3.0 Description of the Performance Tests for the Simulation Facility and Results of the Tests [10 CFR 55.46(b)(1)(ii)]

The Simulation Facility is based on design Baseline 7. Westinghouse has established unique Baselines for the development of I&C and simulator to support various project milestones. Design Baseline 7 was established to meet the dual need for a Simulator for site Operator training and examination and as the Integrated System Validation baseline. Further discussion of this concept is provided later in this document. Simulator testing, which verifies the implementation of design Baseline 7, consisted of factory testing at the vendor facility and Site Acceptance Testing (SAT) at VCS. Test results and supporting documentation is available for inspection.

Factory Testing

The factory testing includes, but is not limited to, I&C testing, specifically the following: PMS Channel Integration Testing and DCIS Software Integration Testing Level 3 testing, as well as Simulator Factory Testing. Testing performed includes:

- Protection and Safety Monitoring System (PMS) software Channel Integration Testing.

- DCIS software has completed applicable Level 3 testing (i.e., software integration testing).

- Simulator Factory Testing

  Tests Performed Satisfactorily During Factory Testing - 220 Specific Tests including the following:

  • Shutdown Margin Test
  • Core Reactivity Coefficients Test
  • Fission Product Poison Test
  • Response to Control Rod Motion Test
  • Rod Worth Test

- Manual Reactor Trip Transient Test
- Simultaneous Trip of All Feedwater Pumps Transient Test
- Simultaneous Closure of all Main Steam Isolation Valves Transient Test
- Simultaneous Trip of All Reactor Coolant Pumps Transient Test
- Trip of any Single Reactor Coolant Pump Transient Test
- Main Turbine Trip without Reactor Trip Transient Test
- Maximum Power Ramp Transient Test
- Maximum Loss-of-Coolant Accident with Loss of Site Power Transient Test
- Maximum Main Steam Line Rupture Transient Test
- Slow Reactor Coolant System Depressurization Transient Test
- Maximum Design Load Rejection Transient Test
- Failure of a Nuclear Instrument Scenario Test
- Station Blackout Scenario Test
- Loss of All Feedwater with ATWS Scenario Test
- Steam Generator Tube Rupture Scenario Test
- Small Break LOCA Scenario Test
- SG Relief Valve Failure to Close Scenario Test
- Fuel Handling Accident Scenario Test
- Natural Circulation Scenario Test
- Three Mile Island Accident Scenario Test
- Improper Fuel Load Scenario Test
- Feedwater System Malfunction that Results in a Decrease in Feedwater Temperature Scenario Test
- Feedwater System Malfunction that Results in an Increase in Feedwater Flow Scenario Test
- Excessive Increase in Secondary Steam Flow Scenario Test
- Inadvertent Operation of the PRHR Heat Exchanger Scenario Test
- Inadvertent Closure of the Main Steam Isolation Valves Scenario Test
- Loss of Normal Feedwater Flow Scenario Test
- Inadvertent Operation of the Core Makeup Tanks During Power Operations Scenario Test
- Inadvertent Opening of a Pressurizer Safety Valve Scenario Test
- Spurious Generator Trip Scenario Test

ISV Scenarios Shakedown Activities

The Westinghouse simulator has been used to conduct a shakedown of the Integrated System Validation (ISV) test scenarios. During the shakedown of ISV scenarios, a list of issues that could potentially impact the ISV was identified. This list has been evaluated for the potential that these issues will contribute to human engineering discrepancies (HEDs). No issue that had the potential for causing a Priority 1 HED (see the definition of HED priorities in APP-OCS-GEH-420, AP1000 Human Factors Engineering Discrepancy Resolution Process) was left unmitigated before starting the ISV shakedown test. The list is available for inspection. The

items in this list have been evaluated by the simulator vendor (Westinghouse) and by SCE&G. Identified discrepancies have been evaluated and added to the Simulator Discrepancy Report, where they will be tracked and dispositioned in accordance with vendor and site processes.

Site Acceptance Testing (SAT)

In preparation for SAT, SCE&G drafted SAT procedures and performed them at the vendor facility on the US Standard Plant and VCS specific simulators at the completion of Factory Acceptance Testing (FAT). This provided evidence that the US Standard Plant and VCS specific simulators performed similarly. This testing also established a baseline to verify the SAT load matched the FAT load following site installation.

The ANSI/ANS-3.5 SAT was performed using a crew of AP1000 certified SROs and consisted of the following tests:

Test #	Title	Pass/Fail	SDRs
Steady State Testing			
AP-OPS-SS-001	50% Power Steady State Accuracy Test	Pass	VC-1501-10
AP-OPS-SS-002	75% Power Steady State Accuracy Test	Pass	VC-1501-10
AP-OPS-SS-003	100% Power Steady State Accuracy Test	Pass	
Transient Tests			
AP-OPS-T-001	Manual Reactor Trip Transient	Pass	
AP-OPS-T-002	Simultaneous Trip of All Feedwater Pumps	Pass	
AP-OPS-T-003	Simultaneous Closure of all Main Steam Isolation Valves	Pass	VC-1502-11
AP-OPS-T-004	Simultaneous Trip of All Reactor Coolant Pumps	Pass	VC-1502-03
AP-OPS-T-005	Trip of any Single Reactor Coolant Pump	Pass	
AP-OPS-T-006	Main Turbine Trip without Reactor Trip	Pass	VC-1502-11
AP-OPS-T-007	Maximum Power Ramp	Pass	VC-1502-10 VC-1502-11
AP-OPS-T-008	Maximum Loss-of-Coolant Accident with Loss of Site Power	Pass	

Test #	Title	Pass/Fail	SDRs
AP-OPS-T-009	Maximum Main Steam Line Rupture	Pass	
AP-OPS-T-010	Slow Reactor Coolant System Depressurization	Pass	VC-1502-05 VC-1502-12
AP-OPS-T-011	Maximum Design Load Rejection	Pass	VC-1502-11
Normal Evolutions			
AP-OPS-EVO-001	Plant Heatup from Mode 5 to Mode 4	Pass	
AP-OPS-EVO-001	Plant Heatup from Mode 4 to Mode 3	Pass	VC-TO-16 VC-TO-74 VC-TO-93
AP-OPS-EVO-002	Plant Startup from Mode 3 to 2% Power	Pass	
AP-OPS-EVO-002	Plant Startup from Mode 2 to 100% Power	Pass	VC-TO-63 VC-TO-64
AP-OPS-EVO-003	Reactor Trip Recovery to 100% After Reactor Trip	Pass	VC-TO-89 VC-TO-90
AP-OPS-EVO-004	Plant Shutdown from Mode 1 to Mode 3	Pass	
AP-OPS-EVO-004	Plant Cooldown from Mode 3 to Cold Shutdown	Pass	
AP-OPS-EVO-005	Surveillance Testing on Safety Equipment	Pass	
AP-OPS-EVO-006	Gray Rod Exchange	Pass	
Simulator Capability			
AP-STS-001	Real Time and Repeatability Test	Pass	
AP-STS-002	Simulated Limits Exceeded Test	Pass	
AP-STS-004	Steady State Similarity	Pass	
AP-STS-005	Transient Similarity	Pass	
Core Testing			
AP-OPS-RX-001	Shutdown Margin	Pass	
AP-OPS-RX-002	Critical Boron Concentration	Pass	
AP-OPS-RX-003	Isothermal Temperature Coefficient	Pass	
AP-OPS-RX-004	Fission Product Poison	Pass	
AP-OPS-RX-005	Control Rod Worth	Pass	
Malfunction Tests			

Test #	Title	Pass/Fail	SDRs
AP-MALF-01-1	Steam Generator Tube Rupture	Pass	
AP-MALF-01-2	LOCA Outside Containment	Pass	VC-1411-12 VC-1501-2
AP-MALF-01-3	Large Break LOCA	Pass	
AP-MALF-01-4	Small Break LOCA	Pass	
AP-MALF-01-5	PZR Safety Valve Fails Open	Pass	VC-1502-12
AP-MALF-01-6	CVS Letdown Relief Fails Open	Pass	
AP-MALF-02-1	Loss of Instrument Air	Pass	
AP-MALF-03-1	Loss of PMS Division A Instrument Busses	Pass	
AP-MALF-03-2	Loss of PMS Division B Instrument Busses	Pass	
AP-MALF-03-3	Loss of PMS Division C Instrument Busses	Pass	
AP-MALF-03-4	Loss of PMS Division D Instrument Busses	Pass	
AP-MALF-03-5	Loss of Offsite Power	Pass	
AP-MALF-03-6	Loss of Switchgear Bus ES-1	Pass	VC-1501-3 VC-TO-45 VC-TO-75
AP-MALF-03-7	Loss of Switchgear Bus ES-2	Pass	VC-TO-45
AP-MALF-03-8	Loss of Switchgear Bus ES-3	Pass	
AP-MALF-03-9	Loss of Switchgear Bus ES-4	Pass	
AP-MALF-03-10	Loss of Switchgear Bus ES-5	Pass	
AP-MALF-03-11	Loss of Switchgear Bus ES-6	Pass	
AP-MALF-03-12	Loss of EK-11 (Annex Bldg 480 VAC Load Center 11)	Pass	
AP-MALF-03-13	Loss of EK-12 (Annex Bldg 480 VAC Load Center 12)	Pass	VC-TO-45 VC-1501-06 VC-1501-08
AP-MALF-03-14	Loss of EK-13 (Annex Bldg 480 VAC Load Center 13)	Pass	VC-1501-04
AP-MALF-03-15	Loss of EK-14 (Annex Bldg 480 VAC Load Center 14)	Pass	VC-TO-75 VC-TO-76
AP-MALF-03-16	Loss of EK-21 (Annex Bldg 480 VAC Load Center 21)	Pass	
AP-MALF-03-17	Loss of EK-22 (Annex Bldg 480 VAC Load Center 22)	Pass	VC-TO-45 VC-1501-06
AP-MALF-03-18	Loss of EK-23 (Annex Bldg 480 VAC Load Center 23)	Pass	

Test #	Title	Pass/Fail	SDRs
AP-MALF-03-19	Loss of EK-24 (Annex Bldg 480 VAC Load Center 24)	Pass	VC-TO-75
AP-MALF-03-20	Loss of EK-31 (TB 480 VAC Load Center 31)	Pass	
AP-MALF-03-21	Loss of EK-41 (TB 480 VAC Load Center 41)	Pass	
AP-MALF-03-22	Loss of EDS1 Instrument Busses	Pass	
AP-MALF-03-23	Loss of EDS2 Instrument Busses	Pass	
AP-MALF-03-24	Loss of EDS3 Instrument Busses	Pass	
AP-MALF-03-25	Loss of EDS4 Instrument Busses	Pass	
AP-MALF-03-26	Aux Transformer ZAS-ET-2B Fault	Pass	
AP-MALF-03-27	*Loss of CWS Medium Voltage Switchgear ES-55	Pass	
AP-MALF-03-28	*Loss of CWS Medium Voltage Switchgear ES-66	Pass	
AP-MALF-03-29	*Loss of CWS Low Voltage Switchgear EK-551	Pass	
AP-MALF-03-30	*Loss of CWS Low Voltage Switchgear EK-552	Pass	
AP-MALF-03-31	*Loss of CWS Low Voltage Switchgear EK-661	Pass	
AP-MALF-03-32	*Loss of CWS Low Voltage Switchgear EK-662	Pass	
AP-MALF-03-33	*Loss of RWS Low Voltage Switchgear EK-151	Pass	
AP-MALF-03-34	*Loss of RWS Low Voltage Switchgear EK-251	Pass	
AP-MALF-03-35	*Loss of RWS Low Voltage Switchgear EK-651	Pass	
AP-MALF-04-1	Reactor Coolant Pump Shaft Break	Pass	VC-TO-48
AP-MALF-04-2	Reactor Coolant Pump Locked Rotor	Pass	
AP-MALF-04-3	MAX RAMP to <75% with Loss of ALL RCPs - Natural Circ Test	Pass	
AP-MALF-05-1	Loss of Condenser Vacuum	Pass	
AP-MALF-05-2	Loss of Condenser Hotwell Level Control (multiple failures)	Pass	

Test #	Title	Pass/Fail	SDRs
AP-MALF-05-3	Loss of Condenser Hotwell Level Control (single failure)	Pass	
AP-MALF-06-1	Loss of Service Water	Pass	
AP-MALF-07-1	Loss of Shutdown Cooling	Pass	
AP-MALF-08-1	Loss of Component Cooling Water	Pass	
AP-MALF-09-1	Loss of Normal Feedwater Flow	Pass	
AP-MALF-10-1	Loss of ALL Heat Sinks	Pass	VC-1502-04, VC-1502-14
AP-MALF-11-1	Multiple PMS Faults of PZR Level Signal to PZR Heaters Control	Pass	
AP-MALF-11-2	Loss of HSL to ILP Logic Cab A01	Pass	
AP-MALF-11-3	Complete Loss of Division C PMS	Pass	
AP-MALF-12-1	Stuck Rod	Pass	
AP-MALF-12-2	Uncoupled Rod	Pass	
AP-MALF-12-3	Dropped Rod	Pass	
AP-MALF-12-4	Misaligned Rod	Pass	
AP-MALF-13-1	Inability to Drive Rods	Pass	
AP-MALF-14-1	Fuel Clad Failure	Pass	
AP-MALF-15-1	Main Turbine Trip	Pass	VC-1410-7
AP-MALF-16-1	Main Generator Trip	Pass	VC-1502-13
AP-MALF-17-1	Inadvertant Operation of CMTs at Power	Pass	
AP-MALF-17-2	Inadvertant Operation of PRHR HX at Power	Pass	
AP-MALF-17-3	Feedwater Sys Malf that Results in a Increase in FW Flow	Pass	
AP-MALF-17-4	Steam Generator PORV Fails Open	Pass	
AP-MALF-18-1	Increasse in RCS Inventory	Pass	
AP-MALF-18-2	Failure of RCS Pressure Control	Pass	
AP-MALF-18-3	Inavertant Operation of ADS	Pass	
AP-MALF-19-1	Reactor Trip	Pass	
AP-MALF-20-1	Main Steam Line Break Outside Containment	Pass	VC-1502-11, VC-1502-15
AP-MALF-20-2	Main Feed Line Break Inside Containment	Pass	

Test #	Title	Pass/Fail	SDRs
AP-MALF-20-3	Main Feed Line Break Outside Containment	Pass	
AP-MALF-20-4	Main Steam Line Break Inside Containment	Pass	
AP-MALF-21-1	Failure of Power Range Nuclear Instrument	Pass	
AP-MALF-21-2	Failure of Intermediate Range Nuclear Instrument	Pass	
AP-MALF-21-3	Failure of Source Range Nuclear Instrument	Pass	
AP-MALF-22-1	Serial Communication Link Failure to DAS Processor Cabinet	Pass	
AP-MALF-22-2	Pressurizer Spray Valve Spurious Open	Pass	
AP-MALF-23-1	Passive Containment Cooling Water Storage Tank Screen Blockage	Pass	
AP-MALF-23-2	Loss of Normal Feedwater Flow with Failure of PXS-V108	Pass	
AP-MALF-23-3	Large Break LOCA with Failure of PXS-V014B	Pass	
AP-MALF-24-1	ATWS with DAS Functional	Pass	
AP-MALF-24-2	ATWS with DAS NOT Functional	Pass	
AP-MALF-24-3	ATWS with Turbine Trip	Pass	VC-TO-47 VC-1502-14

SAT identified discrepancies and repeatability items were communicated to the simulator vendor (Westinghouse) for resolution. Software updates were received and installed. The impacted tests were repeated to verify satisfactory results.

Summary of ANSI/ANS-3.5 SAT

- 94 of 119 tests passed with no issues
- 25 tests passed with discrepancies
- 0 failed tests

Control Manipulations

The Significant Control Manipulations required in 10 CFR 55.31(a)(5) are chosen from the control manipulations and plant evolutions described in 10 CFR 55.59(c)(3)(i), which are described in Section 2.0 of this document.

The VCS simulators core performance testing measured the following reactivity parameters:

Shutdown Margin
Isothermal Temperature Coefficient
Rod Worth
Differential Boron Worth
Xenon / Samarium Worth

The core testing determined that reactivity parameters that affect response to significant control manipulations are within established acceptance criteria based on comparison with vendor provided reactor physics data. The current simulator model, for which we are requesting approval as a Commission-Approved Simulation Facility, meets or exceeds the fidelity which would be required to perform significant control manipulations on the simulator.

Simulator Modeling

The VCS simulator utilizes models related to nuclear and thermal-hydraulic characteristics that replicate the AP1000 core load.

- In addition to the reactor physics tests described above, the SAT has exercised the reactor core model through a range of thermal-hydraulic conditions including normal operations and accident conditions.

- SAT data analysis was performed by Subject Matter Experts (SMEs) with the following qualifications:
  - AP1000 SRO Certification
  - Previous commercial experience

Simulator Fidelity and Discrepancy Reporting

10 CFR 55.46(d) requires continued assurance of simulator fidelity. Each element of 10 CFR 55.46(d) is addressed below:

- Conduct of performance testing throughout the life of the simulation facility in a manner sufficient to ensure that applicable regulatory requirements are met.

The VCS simulators performance testing complies with ANS/ANSI-3.5-1998. This is implemented by VCS-TQP-1103, “Simulator Configuration Management,” and the following Integrated Systems Tests (IST) (VCS-IST-0001 and VCS-IST-0002):

Normal Operations
Steady State Accuracy & Heat Balance
Core
Transient
Surveillance
Real Time
Malfunctions

VCS-TQP-1101, “Simulator Discrepancy Reporting,” is used to document and evaluate simulator discrepancies in order to maintain the simulators in accordance with ANSI/ANS-3.5 and Regulatory Guide 1.149.

VCS-TQP-0104, “Simulator Review Group,” provides for management oversight and is used to:

- Establish standards for monitoring simulator performance.
- Monitor simulator performance indicators to ensure standards are being maintained.
- Ensure that simulator fidelity and performance issues identified during training and examination are addressed in a timely manner.
- Establish priorities and schedules for simulator upgrade projects and monitor the progress for implementation.

- Retention of performance test results in accordance with regulatory requirements.

  Performance records are retained per the following procedure requirements: VC2-IST-0001, VC2-IST-0002, and VCS-TQP-1102 which meet regulatory requirements for retention of performance test results.

- Correction of modeling and hardware discrepancies and discrepancies identified from scenario validation and performance testing.

  Simulator discrepancies are addressed per VCS-TQP-1101 and VCS-TQP-1103.

- Results of any uncorrected performance test failures that may exist at the time of the operating test or requalification program inspection are available for NRC review, prior to or concurrent with preparations for each operating test or requalification program inspection.

  Performance test failures are documented in the Simulator Discrepancy Report (SDR) database, in accordance with VCS-TQP-1101, and are available to examiners upon request.

Integrated System Validation (ISV)

Integrated System Validation is a process used to establish the adequacy of the function allocation using man-in-the-loop tests in dynamic simulated plant conditions. This testing indicates the VCS simulators are ready for conduct of licensed operator training and NRC exams. Furthermore, Section 02.02.b.6(a) of IP 41502 allows for parallel performance of the inspection procedure before the ITAAC for the ISV is completed. Preliminary Priority 1 HED items identified by the ISV have been evaluated and addressed for impact to both training and examinations.

Design Baseline 7

Westinghouse has established unique Baselines for the development of I&C and simulator to support various project milestones. Design Baseline 7 has been established as the Simulation Facility to support Operator training and examination and Integrated System Validation baseline. The next baseline will support fuel load. The design Baseline 7 document establishes a set of requirements that must be incorporated into integrated I&C systems to ensure the design is consistently implemented within various core I&C platforms and systems. Design Baseline 7 includes:

- DCD Revision 19
- Industry Codes and Standards
- Safety Analysis
- Calculation Notes
- Design Changes Required to Support Implementation and Testing of Design Baseline 7

Simulator design, models and software is based on design Baseline 7 Instrumentation and Controls (I&C). Both the simulator and the I&C software have been tested and it was determined that the simulator is of sufficient fidelity.

New I&C issues or design changes identified during the finalization of AP1000 design and/or initial test program are evaluated for impact per Westinghouse Document WNA-PC-00005-WAPP, “AP1000 I&C Projects Configuration Management Plan,” Section 3.5. In accordance with this process the issues are captured in

Westinghouse issue tracking systems, baseline impact reviews are performed and changes are assigned to design Baseline 7 or a future Baseline per the criteria established in the procedure.

4.0 Description of the Procedures for Maintaining Examination and Test Integrity Consistent with the Requirements of 10 CFR 55.49 [10 CFR 55.46(b)(1)(iii)]

Security for Examination development and implementation is accomplished with VCS-TQP-0405, "Regulatory Exam Security." This procedure conforms to the requirements of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," which is founded in the requirements of Section 55.49. The procedure includes:

Door Security Access Control, including Remote Shutdown Workstation
Encryption of IC sets and APP and TRG files
Security of Video Recording Equipment
Physical Security of Examination material

Subsequent design changes will be evaluated for incorporation into a later design baseline. Operators will be gap trained and evaluated to those changes that affect the simulators.

5.0 Summary

As described in the preceding sections, the VCS simulators:

- Demonstrate expected plant response to operator input and to normal, transient, and accident conditions to which the simulator has been designed to respond.

- Are sufficient in scope and fidelity to allow conduct of the evolutions listed in 10 CFR 55.45(a)(1) through (13), and 55.59(c)(3)(i)(A) through (AA).

- Utilize models relating to nuclear and thermal-hydraulic characteristics that replicate the AP1000 core load.

- Demonstrate simulator fidelity such that significant control manipulations are completed without procedural exceptions, simulator performance exceptions, or deviation from the approved training scenario sequence.

6.0 Conclusion

Based on the information provided above, the VCSNS Units 2 and 3 simulation facility meets the requirements of a Commission-Approved Simulation Facility as defined in 10 CFR 55.46(b). SCE&G respectfully requests NRC approval of the VCSNS Units 2 and 3 simulation facility as a Commission-Approved Simulation Facility for use in the administration and conduct of operating tests in accordance with 10 CFR 55.46(b)(2).