NRC FORM 474
(10-86)
10 CFR § 55.45(b), 55.4 and 55.5

U.S. NUCLEAR REGULATORY COMMISSION
Approved by OMB 3150-0138
Expires 10-31-89

SIMULATION FACILITY CERTIFICATION

INSTRUCTIONS. This form is to be filed for initial certification, recertification (if required), and for any change to a simulation facility performance testing plan made after initial submittal of such a plan. Provide the following information, and check the appropriate box to indicate reason for submittal.

FACILITY: INDIAN POINT UNIT 3

DOCKET NUMBER: 50- 286

LICENSEE: NEW YORK POWER AUTHORITY

DATE: 1/28/91

This is to certify that: 1. the above named facility licensee is using a simulation facility consisting solely of a plant-referenced simulator that meets the requirements of 10 CFR § 55.45; 2. this simulation facility meets the guidance contained in ANSI/ANS 3.5, 1985, as endorsed by NRC Regulatory Guide 1.149; and 3. documentation is available for NRC review in accordance with 10 CFR § 55.45(b). If there are any exceptions to the certification of item 2 above, check here ☐ and describe fully on additional pages as necessary. see attached Section 8.

NAME *(or other identification)* AND LOCATION OF SIMULATION FACILITY
IP3 TRAINING SIMULATOR INDIAN POINT 3 BUCHANAN, NEW YORK

[X] SIMULATION FACILITY PERFORMANCE TEST ABSTRACTS ATTACHED. *(For performance tests conducted in the period ending with the date of this certification)*

DESCRIPTION OF PERFORMANCE TESTING COMPLETED *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached IP3 Initial Certification Submittal Section 5.B.

[X] SIMULATION FACILITY PERFORMANCE TESTING SCHEDULE ATTACHED. *(For the conduct of approximately 25% of performance tests per year for the four year period commencing with the date of this certification.)*

DESCRIPTION OF PERFORMANCE TESTING TO BE CONDUCTED *(Attach additional page(s) as necessary, and identify the item description being continued)*

See attached IP3 Initial Certification Submittal Section 5.B.

[ ] PERFORMANCE TESTING PLAN CHANGE. *(For any modification to a performance testing plan submitted on a previous certification)*

DESCRIPTION OF PERFORMANCE TESTING PLAN CHANGE *(Attach additional page(s) as necessary, and identify the item description being continued)*

N/A

[ ] RECERTIFICATION *(Describe corrective actions taken, attach results of completed performance testing in accordance with 10 CFR § 55.45(b)(5)(v). Attach additional page(s) as necessary, and identify the item description being continued.)*

N/A

Any false statement or omission in this document, including attachments, may be subject to civil and criminal sanctions. I certify under penalty of perjury that the information in this document and attachments is true and correct.

SIGNATURE - AUTHORIZED REPRESENTATIVE: J. E. Pinnell

TITLE: Resident Manager, Indian Point 3

DATE: 2/21/91

In accordance with 10 CFR § 55.5, Communications, this form shall be submitted to the NRC as follows:

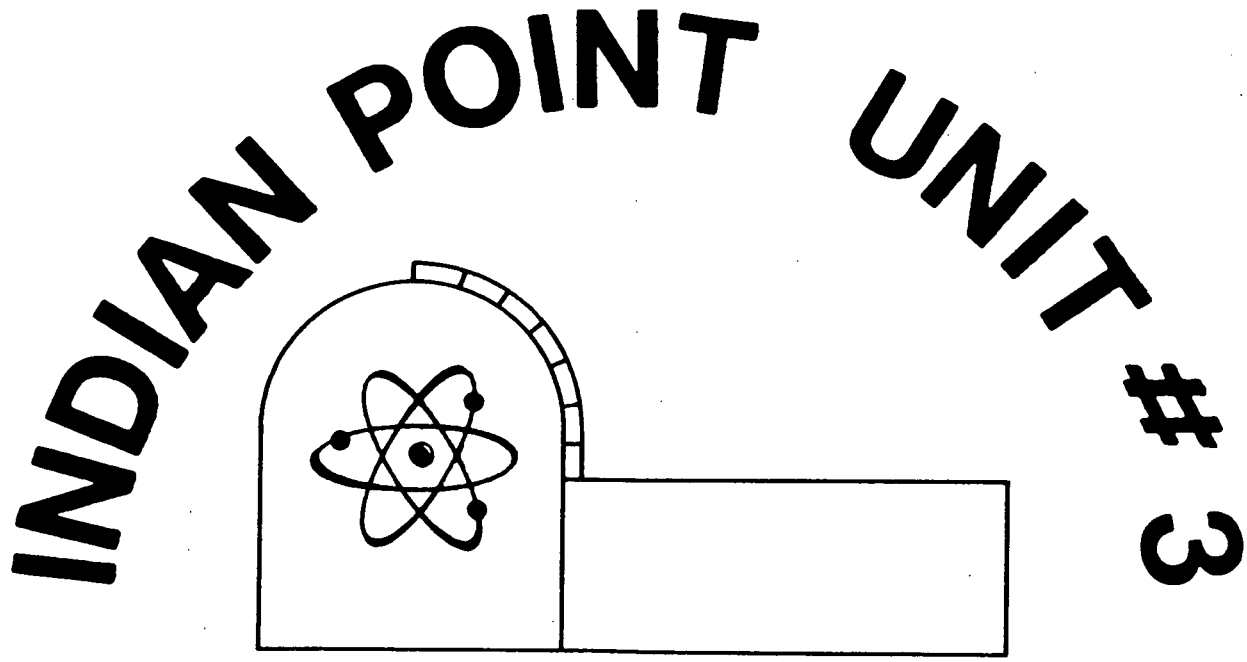
BY MAIL ADDRESSED TO: Director, Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

BY DELIVERY IN PERSON TO THE NRC OFFICE AT: 7920 Norfolk Avenue
Bethesda, MD

New York Power Authority

INITIAL SIMULATOR

CERTIFICATION SUBMITTAL



NEW YORK POWER AUTHORITY

INDIAN POINT UNIT 3

PLANT REFERENCED SIMULATOR

INITIAL CERTIFICATION SUBMITTAL

February, 1991

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1. General Information

The New York Power Authority is the owner and operator of the Indian Point Unit 3 plant referenced simulator. The reference plant is a Westinghouse four loop PWR rated at 1013 MWE.

The IP3 simulator was constructed by Westinghouse Electric Co. and declared "Ready For Training" in February of 1989. Since that time The simulator has been successfully used for NRC administered Initial, Upgrade, and Requalification operational examinations.

The contents of this report are supplied as supporting documentation to the New York Power Authority's initial submittal of NRC Form - 474 for certification of the IP3 simulation facility in accordance with 10CFR Part 55.45, Regulatory Guide 1.149 rev. 1, and ANSI/ANS-3.5-1985.

2. CONTROL ROOM COMPARISONS

CONTENTS

2.A. Control Room Physical Arrangement

The initial design of the IP3 simulation facility was based on the objective to replicate the actual plant control room to the greatest extent practicable. As such, the simulator control room was constructed using dimensional relationships, materials, and appointments to match the reference plant.

Some exceptions to this objective were taken to consider the need to conduct and observe training, support simulator maintenance, and the decision to exclude adjoining plant facilities which do not directly impact plant operations. These items are described below including justifications. A simulator facility floor plan drawing is included at the back of this section for reference purposes.

Differences -

1) A door and two (2) observation windows are installed within the operating area of the simulator. These features are considered necessary to support training activities and conduct operational examinations.

2) The inside of the simulator Supervisory Panels do not have a solid back as they do in the plant. Instead these panels are open to an Access Hallway to support maintenance of the extensive computer I/O equipment located within these panels. Since few operator activities take place within the panels this arrangement has minimal impact on training activities.

3) The separate kitchen and toilet rooms located at the rear of the plant control room have not been provided as part of the simulation facility. The exclusion of these areas does not detract from the ability to conduct training or operational examinations.

2.B. Panels and Equipment

Provision of panels and equipment in the IP3 simulator is based on the requirements to adequately support conduct of training and operational examinations. Additional consideration is given to this area from a human factors perspective. That is, to include and replicate those items found in the plant control room such as tables, storage cabinets, stepstools, etc. that may not be called out procedurally but enhance the realism of the simulator environment.

Fidelity between the plant and simulator is monitored and maintained by the simulator test program under the category of Control Room Tests (see section 5). These tests call for taking detailed photographs of the plant control room panels and making an item by item comparison to the simulator. This process not only identifies subtle differences but also serves as a backup to the Simulator Configuration Management System regarding incorporation of plant modifications.

Presently there are several significant differences between the plant control room and the simulator. These items are described below including action plans for resolution.

Differences -

1) The Reactor Vessel Level Indicating System (RVLIS) is not fully installed.

Status - Open, RVLIS data parameters are available via the Qualified Safety Parameter Display System (QSPDS) console but RVLIS associated cabinetry is not presently installed.

Resolution - Remaining work to be completed under Simulator Work Request Number (SWRN) 8900023 by year end 1991.

2) The new Radiation Monitoring System panels have not been installed.

Status - Open, most of the necessary radiation monitoring parameters are available to the operators on the old equipment which is installed and operational in the simulator. Work is in progress to provide the new equipment.

Resolution - New system to be installed and fully functional under SWRN's 8800046, 8800226, 8800408, and 8800456 by year end 1991.

3) The Digital Metal Impact Monitoring System (DMIMS) has not been installed.

Status - Open, the simulator Gross Failed Fuel panel remains in the space allocated for DMIMS.

Resolution - The DMIMS panel will be installed and functional under SWRN 8800081 by year end 1991.

4) The Anticipated Transient Without Scram system (ATWAS) has not been installed.

Status - Open, work in progress, partially completed.

Resolution - The ATWAS system will be installed and functional under SWRN 8800457 by year end 1991.

2.C. Control Room Systems

All of the plant systems required to support control room operator training and examinations are provided as part of the simulation. This includes system components or functions that are outside the confines of the control room but integral to plant operations. The following is a comparative listing of the IP3 plant systems and those included within the simulation.

PLANT VERSUS SIMULATOR SYSTEMS COMPARISONS

PLANT SYSTEM	INCLUDED IN SIMULATION	MODEL NAME
REACTOR COOLANT	YES	RCS
STEAM GENERATOR	YES	SGN
REACTOR COOLANT PUMP	YES	RCP
PZR & PRESSURE RELIEF TANK	YES	PRZ
		PRT
REACTOR VESSEL & INTERNALS	YES	RTC
CHEMICAL & VOLUME CONTROL	YES	CVC
COMPONENT COOLING WATER	YES	CCW
RESIDUAL HEAT REMOVAL	YES	RHR
SPENT FUEL COOLING	YES	SFP
LIQUID WASTE DISPOSAL	YES	WDS
SOLID WASTE DISPOSAL	NO	
PRIMARY MAKEUP WATER	YES	RMW
STEAM GENERATOR BLOWDOWN	YES	SGB
PLANT CHEMISTRY	NO	
PRIMARY SAMPLING	YES	NSS
ENGINEERED SAFEGUARDS	YES	PPL
		DSQ
SAFETY INJECTION	YES	SIS
CONTAINMENT SPRAY	YES	CNS
CONTAINMENT COOLING & FILTRATION	YES	CNM
ISOLATION VALVE SEAL WATER	NO	
WELD CHANNEL & CONTAINMENT PRESSURIZATION	YES	CAS
VAPOR CONTAINMENT	YES	CNM
CONTAINMENT ISOLATION	YES	PPL
HOT PENETRATION COOLING	NO	
POST ACCIDENT HYDROGEN CONTROL VENTILATION	NO	
VENTILATION	YES	HVA
RADIATION MONITORING AND PROTECTION	YES	RMS
NUCLEAR INSTRUMENTATION	YES	NIS

INCORE INSTRUMENTATION	YES	CFM
CORE DESIGN AND CONTROL	NO	
ROD CLUSTER CONTROL	YES	CRF
ROD POSITION INDICATION	YES	CRF
FUEL & CORE COMPONENT HANDLING	NO	
MAIN & REHEAT STEAM	YES	MSS
STEAM DUMP & LOW PRESSURE BYPASS DUMPS	YES	MSS
EXTRACTION STEAM, REHEATER CONDENSATE	YES	MSS
CONDENSATE	YES	CFW
FEEDWATER	YES	CFW
STEAM GENERATOR WATER LEVEL CONTROL	YES	PCS
INTAKE STRUCTURE	NO	
CIRCULATING WATER	YES	CWS
SERVICE WATER	YES	SWS
SECONDARY SAMPLING	NO	
TURBINE GENERATOR	YES	GEN MGA
TURBINE SUPPORT SYSTEMS	YES	TCA TSI
ELECTRICAL SYSTEMS	YES	EPS SWD SYN
EXCITER	YES	GEN
EMERGENCY DIESEL	YES	EDG
OVERALL UNIT PROTECTION	YES	PPL
AUXILIARY STEAM	PARTIAL	ASB
INSTRUMENT AIR	YES	CAS
STATION AIR	YES	CAS
CHEMICAL FEED	NO	
FIRE PROTECTION & CITY WATER SYSTEM	PARTIAL	n/a
NITROGEN, HYDROGEN, CO2, & OXYGEN	YES	SGS
CRANES & MONORAILS	NO	
WATER TREATMENT	NO	
ADMIN SERVICES BUILDING	NO	
HOUSE SERVICES BOILER	NO	
ELECTRICAL HEAT TRACE	NO	
SEISMOGRAPH	PARTIAL	n/a
COMPUTER COMPLEX	YES	IPC
CONDENSATE POLISHER	YES	CFW

2.D. Control Room Environment

The IP3 simulator control room environment is nearly identical to the reference plant. Room dimensions, wall color, ceiling configuration and materials, lighting fixtures style and locations, HVAC grills, etc. all replicate the plant control room.

Differences -

1) The simulator room floor is a raised computer floor type with 2' X 2' carpeted tiles. The carpet tiles are a solid burgundy color. The plant control room has a burgundy tweed color carpet installed on a concrete slab floor.

2) The simulator room has several Halon discharge nozzles and sound system microphones that protrude below the finish ceiling. The plant control room does not have either of these items.

3) The simulator room has a sound mimicking system that poorly replicates the sounds heard in the plant control room and frequently fails. This system is presently being replaced with equipment that has augmented features and improved reliability.

4) The simulator does not have a photocopy machine installed near the fire protection panels.

Resolution - Items 1,2, and 4 do not adversely impact the training or examination process and are considered closed items. Item 3 is being corrected under SWRN 8900020 and scheduled for completion by year end 1991.

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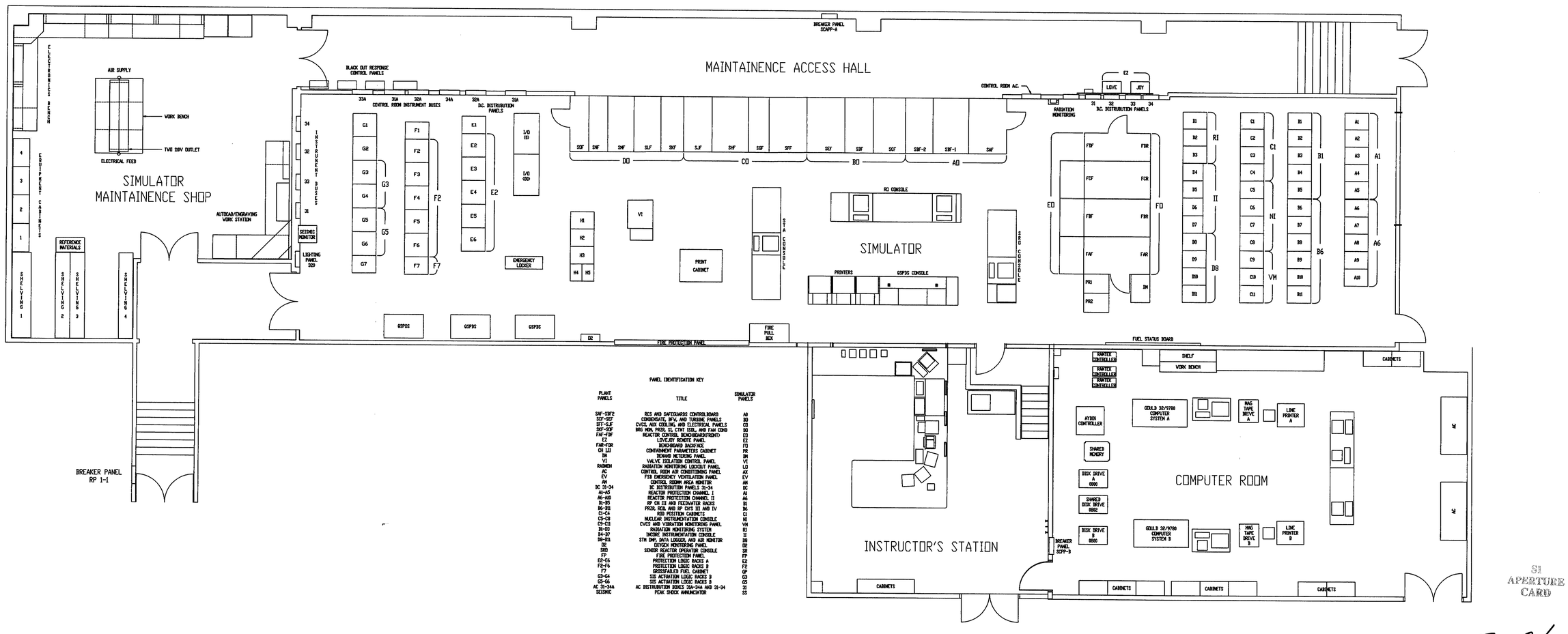
SEE APERTURE CARDS

NUMBER OF OVERSIZE PAGES FILMED ON APERTURE CARDS 1

APERTURE CARD/HARD COPY AVAILABLE FROM

RECORDS AND REPORTS MANAGEMENT BRANCH

INDIAN POINT 3
SIMULATOR TRAINING FACILITY



PANEL IDENTIFICATION KEY

PLANT PANELS	TITLE	SIMULATOR PANELS
SAF-SBF2	RCS AND SAFEGUARDS CONTROLBOARD	A0
SCF-SEF	CONDENSATE, BFW, AND TURBINE PANELS	B0
SFF-SJF	CVCS, AUX COOLING, AND ELECTRICAL PANELS	C0
SKF-SNF	BRU MON, PROG, SI, CTMT ISOL, AND FAN COND	D0
FAF-FNF	REACTOR CONTROL BENCHBOARD(FRONT)	E0
E2	LOVE-JOY REMOTE PANEL	E2
FAR-FDR	BENCHBOARD BACKFACE	F0
CH LU	CONTAINMENT PARAMETERS CABINET	PR
DM	DEMAND METERING PANEL	DM
V1	VALVE ISOLATION CONTROL PANEL	V1
RADMON	RADIATION MONITORING LOCKOUT PANEL	LO
AC	CONTROL ROOM AIR CONDITIONING PANEL	AC
EV	FSR EMERGENCY VENTILATION PANEL	EV
AM	CONTROL ROOM AREA MONITOR	AM
DC 31-34	DC DISTRIBUTION PANELS 31-34	DC
A1-A5	REACTOR PROTECTION CHANNEL I	A1
A6-A10	REACTOR PROTECTION CHANNEL II	A6
B1-B5	RP CH III AND FEEDWATER RACKS	B1
B6-B11	PROG, RCD, AND RP CHS II AND IV	B6
C1-C4	RED POSITION CABINETS	C1
C5-C8	NUCLEAR INSTRUMENTATION CONSOLE	NI
C9-C11	CVCS AND VIBRATION MONITORING PANEL	VM
R1-R3	RADIATION MONITORING SYSTEM	R1
I4-I7	INCORE INSTRUMENTATION CONSOLE	II
D8-D11	STM EMP, DATA LOGGER, AND AIR MONITOR	DB
DE	DEVICEN MONITORING PANEL	DE
SRO	SENIOR REACTOR OPERATOR CONSOLE	SR
FP	FIRE PROTECTION PANEL	FP
E2-E6	PROTECTION LOGIC RACKS A	E2
F2-F6	PROTECTION LOGIC RACKS B	F2
F7	GROSS FAILED FUEL CABINET	GF
G2-G4	SIS ACTUATION LOGIC RACKS B	G2
G5-G6	SIS ACTUATION LOGIC RACKS B	G5
AC 31-34A	AC DISTRUBUTION BOXES 32A-34A AND 31-34	31
SEISMIC	PEAK SHOCK ANNUNCIATOR	SS

9103140407-01

IP3 SIMULATOR
FLOOR PLAN