

- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, or special nuclear materials as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear materials without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate such byproduct, source, or special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter 1 and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

AmerGen Energy Company, LLC is authorized to operate the facility at steady-state power levels not in excess of 1930 megawatts (thermal) (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 263, are hereby incorporated in the license. AmerGen Energy Company, LLC shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

AmerGen Energy Company, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility and as approved in the Safety Evaluation Report dated March 3, 1978, and supplements thereto, subject to the following provision:

1.19 INSTRUMENTATION SURVEILLANCE DEFINITIONS

A. CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

B. CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps.

C. CHANNEL CALIBRATION

A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.

D. Source Check

A SOURCE CHECK is the qualitative assessment of channel response when the channel sensor is exposed to a source of radioactivity.

1.20 FDSAR

Oyster Creek Unit No. 1 Facility Description and Safety Analysis Report as amended by revised pages and figure changes contained in Amendments 14, 31 and 45\* and continuing through Amendment 79.

1.21 CORE ALTERATION

A core alteration is the addition, removal, relocation or other manual movement of fuel or controls in the reactor core. Control rod movement with the control rod drive hydraulic system is not defined as a core alteration.

1.22 CRITICAL POWER RATIO

The critical power ratio is the ratio of that power in a fuel assembly which is calculated, by application of an NRC approved CPR correlation, to cause some point in that assembly to experience boiling transition divided by the actual assembly operating power.

1.23 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

- A. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals.

\*Per Erata dtd. 4-9-69

TABLE 3.1.1 (CONT'D)

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- dd. If any isolation condenser inlet (steam side) isolation valve becomes or is made inoperable in the open position during the RUN MODE comply with Specification 3.8.E. If an AC motor-operated outlet (condensate return) isolation valve becomes or is made inoperable in the open position during the RUN MODE comply with Specification 3.8.F.
- ee. With the number of OPERABLE channels one less than the Minimum Number of OPERABLE Instrument Channels per OPERABLE Trip System, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable channel is placed in the tripped condition within 1 hour.
- ff. This function is not required to be OPERABLE when the associated safety bus is not required to be energized or fully OPERABLE as per applicable sections of these Technical Specifications.
- gg. Deleted
- hh. The high flow trip function for "B" Isolation Condenser is bypassed upon initiation of the alternate shutdown panel. This prevents a spurious trip of the Isolation Condenser in the event of fire induced circuit damage.
- ii. Instrument shall be OPERABLE during main condenser air ejector operation except that a channel may be taken out-of-service for the purpose of a check, calibration, test, or maintenance without declaring it inoperable.
- jj. With no channel OPERABLE, main condenser offgas may be released to the environment for as long as 72 hours provided the stack radioactive noble gas monitor is OPERABLE. Otherwise, be in at least SHUTDOWN CONDITION within 24 hours.
- kk. One channel may be placed in an inoperable status for up to two hours for required surveillance without placing the trip system in the tripped condition.
- ll. This function not required to be OPERABLE with the reactor vessel head removed or unbolted.
- mm. "Instrument Channel" in this case refers to the bellows which sense vacuum in each of the three condensers (A, B, and C), and "Trip System" refers to vacuum trip systems 1 and 2.

MINIMUM CHECK, CALIBRATION AND TEST FREQUENCY FOR PROTECTIVE INSTRUMENTATION

- NOTE 1: Each automatic scram contactor is required to be tested at least once per week. When not tested by other means, the weekly test can be performed by using the subchannel test switches.
- NOTE 2: At least daily during reactor POWER OPERATION, the reactor neutron flux peaking factor shall be estimated and flow-referenced APRM scram and rod block settings shall be adjusted, if necessary, as specified in Section 2.3 Specifications A.1 and A.2.
- NOTE 3: Calibrate electronic bistable trips by injection of an external test current once per 3 months. Calibrate transmitters by application of test pressure once per 12 months.
- NOTE 4: Perform LPRM detectors calibration every 1000 MWD/MT Average Core Exposure

The following notes are only for Item 15 of Table 4.1.1:

A channel may be taken out of service for the purpose of a check, calibration, test or maintenance without declaring the channel to be inoperable.

- a. The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
- 1) Instrument indicates measured levels above the alarm setpoint.
  - 2) Instrument indicates a downscale failure.
  - 3) Instrument controls not set in operate mode.
  - 4) Instrument electrical power loss.

- \* G. Primary Coolant System Pressure Isolation Valves Specification:
  - 1. Periodic leakage testing <sup>(a)</sup> on each valve listed in Table 4.3.1 shall be accomplished prior to exceeding 600 psig reactor pressure every time the plant is placed in the cold shutdown condition for refueling, each time the plant is placed in a cold shutdown condition for 72 hours if testing has not been accomplished in the preceding 9 months, whenever the valve is moved whether by manual actuation or due to flow conditions, and after returning the valve to service after maintenance, repair or replacement work is performed.
  
- H. Reactor Coolant System Leakage
  - 1. Unidentified leakage rate shall be calculated at least once every 4 hours.
  - 2. Total leakage rate (identified and unidentified) shall be calculated at least once every 8 hours.
  - 3. A CHANNEL CALIBRATION of the primary containment sump flow integrator and the primary containment equipment drain tank flow integrator shall be conducted at least once per 24 months.
  
- I. An inservice inspection program for piping identified in NRC Generic Letter 88-01 shall be performed in accordance with the NRC staff positions on schedule, methods, personnel, and sample expansion included in the generic letter or in accordance with alternate measures approved by the NRC staff.

Bases:

Data is available relating neutron fluence ( $E > 1.0\text{MeV}$ ) and the change in the Reference Nil-Ductility Transition Temperature ( $RT_{NDT}$ ). The pressure-temperature (P-T) operating curves A, B, and C in Figures 3.3.1, 3.3.2, and 3.3.3 were developed based on the results of testing and evaluation of specimens removed from the vessel after 8.38 EFPY of operation. Similar testing and analysis will be performed throughout vessel life to monitor the effects of neutron irradiation on the reactor vessel shell materials.

The inspection program will reveal problem areas should they occur, before a leak develops. In addition, extensive visual inspection for leaks will be made on critical systems. Oyster Creek was designed and constructed prior to

<sup>(a)</sup> To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

\* NRC Order dated April 20, 1981.

4.4 EMERGENCY COOLING

Applicability: Applies to surveillance requirements for the emergency cooling systems.

Objective: To verify the operability of the emergency cooling systems.

Specification: Surveillance of the emergency cooling systems shall be performed as follows:

<u>Item</u>	<u>Frequency</u>
<u>A. Core Spray System</u>	
1. Pump Operability	Once/3 months. Also after major maintenance and prior to startup following a refueling outage.
2. Motor operated valve operability	Once/3 months
3. Automatic actuation test	Every three months
4. Pump compartment water-tight doors closed	Once/week and after each entry
5. Core spray header $\Delta P$ instrumentation	
CHANNEL CHECK	Once/day
CHANNEL CALIBRATION	Once/3 months
CHANNEL FUNCTIONAL TEST	Once/3 months
<u>B. Automatic Depressurization</u>	
1. Verify each relief valve actuator strokes when manually actuated	Once every 24 months
2. Automatic actuation test	Every refueling outage
<u>C. Containment Cooling System</u>	
1. Pump Operability	Once/3 months. Also after major maintenance and prior to startup following a refueling outage.

#### 4.12 Alternate Shutdown Monitoring Instrumentation

Applicability: Applies to the surveillance requirements of the alternate shutdown monitoring instrumentation.

Objective: To specify the minimum frequency and type of surveillance to be applied to the alternate shutdown monitoring instrumentation.

Specification:

Each of the alternate shutdown monitoring channels shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.12-1.

Basis:

The operability of the alternate shutdown monitoring instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of hot shutdown of the plant from locations outside of the control room. The type and frequency of surveillances required in Table 4.12-1 are consistent with or more conservative than the BWR Standard Technical Specifications.

TABLE 4.12-1 ALTERNATE SHUTDOWN  
MONITORING INSTRUMENTATION

<u>Functional Limit</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
Reactor Pressure	M	Q
Reactor Water Level (fuel zone)	n/a	Q
Condensate Storage Tank Level	M	R
Service Water Pump Discharge Pressure	M	R
Control Rod Drive System Flowmeter	M	R
Shutdown Cooling System Flowmeter	n/a	R
Isolation Condenser "B" Shell Water Level	M	R
Reactor Building Closed Cooling Water Pump Discharge Pressure	M	R

M - Monthly

Q - Quarterly

R - Refueling Outage

4.13 ACCIDENT MONITORING INSTRUMENTATION

Applicability: Applies to surveillance requirements for the accident monitoring instrumentation.

Objective: To verify the operability of the accident monitoring instrumentation.

- Specification:
- A. Safety & Relief Valve Position Indicators  
Each accident monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.13-1.
  - B. Wide Range Drywell Pressure Monitor  
Each accident monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.13-1.
  - C. Wide Range Torus Water Level Monitor  
Each accident monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.13-1.
  - D. DELETED
  - E. Containment High-Range Radiation Monitor  
Each accident monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.13-1.
  - F. High Range Radioactive Noble Gas Effluent Monitor  
Each accident monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.13-1.

Bases:

The operability of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables during and following an accident. This capability is consistent with NUREGs 0578 and 0737.

TABLE 4.13-1

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Primary and Safety Valve Position Indicator (Primary Detector*)	A	B
Relief and Safety Valve Position Indicator (Backup Indications**)	A	B
Relief Valve Position Indicator (Common Header Temperature Element**)	C	B
2. Wide Range Drywell Pressure Monitor (PT/PR 53 & 54)	A	D
3. Wide Range Torus Water Level Monitor (LT/LR 37 & 38)	A	D
4. DELETED		
5. Containment High Range Radiation Monitor	A	F***
6. High Range Radioactive Noble Gas Effluent Monitor		
a. Main Stack	A	G
b. Turbine Building Vent	A	G

Legend:

- A = at least once per 31 days
- B = at least once per 24 months
- C = at least once per 15 days until channel calibration is performed and thence at least once per 31 days
- D = at least once per 6 months
- E = DELETED
- F = each refueling outage
- G = once per 20 months

\* Acoustic Monitor

\*\* Thermocouple

\*\*\* CHANNEL CALIBRATION shall consist of electronic signal substitution of the channel, not including the detector, for all decades above 10R/hr and a one point calibration check of the detector at or below 10R/hr by means of a calibrated portable radiation source traceable to NBS.

TABLE 4.15.2

EXPLOSIVE GAS MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION(f)	CHANNEL FUNCTIONAL TEST	CHANNEL SURVEILLANCE REQUIRED (a)
1. Main Condenser Offgas Treatment System Hydrogen Monitor	D	N/A	Q(g)	M	(c)

Legend: D = once per 24 hrs; M = once per 31 days; Q = once per 92 days;  
N/A = Not Applicable.

TABLE 4.15.2 NOTATIONS

- (a) Instrumentation shall be OPERABLE and in service except that a channel may be taken out of services for the purpose of a check, calibration, test or maintenance without declaring it to be inoperable.
- (c) During main condenser offgas treatment system operation.
- (f) The CHANNEL CALIBRATION shall be performed according to established station calibration procedures.
- (g) A CHANNEL CALIBRATION shall include the use of at least two standard gas samples, each containing a known volume percent hydrogen in the range of the instrument, balance nitrogen.