



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PHILADELPHIA ELECTRIC COMPANY  
PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DELMARVA POWER AND LIGHT COMPANY  
ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-277

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 88  
License No. DPR-44

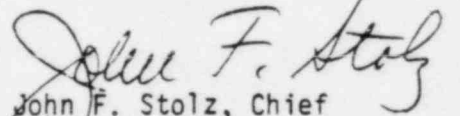
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company, et al. (the licensee) dated October 14, 1980, as supplemented October 7, 1981, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-44 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 88, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 1983

ATTACHMENT TO LICENSE AMENDMENT NO. 88

FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
42	42
73	73
—	74a (new page)
83	83*
92	92
100	100
112	112

\*Overleaf page provided for document completeness.

TABLE 4.1.1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS  
 MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
High Water Level In Scram Discharge Tank	A	Trip Channel and Alarm	Every 1 month.
Turbine Condenser Low Vacuum (6)	B2	Trip Channel and Alarm (4)	Every 1 month (1).
Main Steam Line High Radiation	B1	Trip Channel and Alarm (4)	Once/week.
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Every 1 month (1).
Turbine Control Valve EHC Oil Pressure	A	Trip Channel and Alarm	Every 1 month.
Turbine First Stage Pressure Permissive	A	Trip Channel and Alarm	Every 3 months (1).
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Every 1 month (1).
Reactor Pressure Permissive (6)	B2	Trip Channel and Alarm (4)	Every 3 months.

-42-

Amendment No. 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

TABLE 3.2.C  
INSTRUMENTATION THAT INITIATES CONTROL ROD BLOCKS

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action
2	APRM Upscale (Flow Biased)	$\leq (0.66W+42-0.66\Delta W) \times \frac{FRP}{MFLPD} \quad (2)$	6 Inst. Channels	(1)
2	APRM Upscale (Startup Mode)	$\leq 12\%$	6 Inst. Channels	(1)
2	APRM Downscale	$> 2.5$ indicated on scale	6 Inst. Channels	(1)
1 (7)	Rod Block Monitor (Flow Biased)	$\leq (0.66W+41-0.66\Delta W) \times \frac{FRP}{MFLPD} \quad (2)$	2 Inst. Channels	(1)
1 (7)	Rod Block Monitor Downscale	$\geq 2.5$ indicated on scale	2 Inst. Channels	(1)
3	IRM Downscale (3)	$> 2.5$ indicated on scale	8 Inst. Channels	(1)
3	IRM Detector not in Startup Position	(8)	8 Inst. Channels	(1)
3	IRM Upscale	$\leq 100$ indicated on scale	8 Inst. Channels	(1)
2 (5)	SRM Detector not in Startup Position	(4)	4 Inst. Channels	(1)
2 (5) (6)	SRM Upscale	$\leq 10^5$ counts/sec.	4 Inst. Channels	(1)
1	Scram Discharge Volume High Level	$\leq .25$ gallons	1 Inst. Channel	(9)

Unit 2

NOTES FOR TABLE 3.2.C (Cont.)

9. If the number of operable channels is less than required by the minimum operable per trip function requirement, place the inoperable channel in the tripped condition within one hour. This note is applicable in the "Run" mode, the "Startup" mode and the "Refuel" mode if more than one control rod is withdrawn.

TABLE 4.2.C

MINIMUM TEST AND CALIBRATION FREQUENCY FOR CONTROL ROD BLOCKS ACTUATION

<u>Instrument Channel</u>	<u>Instrument Functional Test</u>	<u>Calibration</u>	<u>Instrument Check</u>
1) APRM - Downscale	(1) (3)	Once/3 months	Once/day
2) APRM - Upscale	(1) (3)	Once/3 months	Once/day
3) IRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
4) IRM - Downscale	(2) (3)	Startup or Control Shutdown	(2)
5) RBM - Upscale	(1) (3)	Once/6 months	Once/day
6) RBM - Downscale	(1) (3)	Once/6 months	Once/day
7) SRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
8) SRM - Detector Not in Startup Position	(2) (3)	Startup or Control Shutdown	(2)
9) IRM - Detector Not in Startup Position	(2) (3)	Startup or Control Shutdown	(2)
10) Scram Discharge Volume - High Level	Quarterly	Once/Operating Cycle	NA
<u>Logic System Functional Test (4) (6)</u>		<u>Frequency</u>	
(1) System Logic Check		Once/6 months	

TABLE 4.2.D

MINIMUM TEST AND CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

<u>Instrument Channels</u>	<u>Instrument Functional Test</u>	<u>Calibration</u>	<u>Instrument Check (2)</u>
1) Refuel Area Exhaust Monitors - Upscale	(1)	Once/3 months	Once/day
2) Reactor Building Area Exhaust Monitors - Upscale	(1)	Once/3 months	Once/day
3) Off-Gas Radiation Monitors	(1)	Once/3 months	Once/day
<u>Logic System Functional Test (4) (6)</u>	<u>Frequency</u>		
1) Reactor Building Isolation	Once/6 months		
2) Standby Gas Treatment System Actuation	Once/6 months		
3) Steam Jet Air Ejector Off-Gas Line Isolation	Once/6 months		



### 3.2 BASES (Cont'd)

The APRM rod block function is flow biased and prevents a significant reduction in MCPR, especially during operation at reduced flow. The APRM provides gross core protection; i.e., limits the gross core power increase from withdrawal of control rods in the normal withdrawal sequences. The trips are set so that MCPR is maintained greater than the fuel cladding integrity safety limit.

The RBM rod block function provides local protection of the core; i.e., the prevention of boiling transition in the local region of the core, for a single rod withdrawal error from a limiting control rod pattern.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level.

A downscale indication on an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in the control rod motion and thus, control rod motion is prevented. The downscale trips are set at 2.5 indicated on scale.

The flow comparator components have only one logic channel and are not required for safety. The flow comparator must be bypassed when operating with one recirculation water pump.

The refueling interlocks also operate one logic channel, and are required for safety only when the mode switch is in the refueling position.

High water level in the scram discharge volume may be indicative of excessive scram valve leakage, or plugging or closing of the discharge volume drain valve, and could jeopardize the ability of all rods to fully insert on a scram signal.

For effective emergency core cooling for small pipe breaks, the HPCI system must function since reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The automatic pressure relief function (ADS) is provided as a backup to the HPCI in the event the HPCI does not operate. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two air ejector off-gas monitors are provided and when their trip point is reached, cause an isolation of the air ejector off-gas line. Isolation is initiated when both instruments reach their high trip point or one has an upscale

LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.3.A Reactivity Limitations  
(Cont'd)

failure is not due to a failed control rod drive mechanism collet housing.

- b. The control rod directional control valves for inoperable control rods shall be disarmed electrically and the control rods shall be in such positions that Specification 3.3.A.1 is met.
- c. Control rods with scram times greater than those permitted by Specification 3.3.C.3 are inoperable, but if they can be inserted with control rod drive pressure they need not be disarmed electrically.
- d. Control rods with a failed "Full-in" or "Full-out" position switch may be bypassed in the Rod Sequence Control System and considered operable if the actual rod position is known. These rods must be moved in sequence to their correct positions (full in on insertion or full out on withdrawal.)
- e. Control rods with inoperable accumulators or those whose position cannot be positively determined shall be considered inoperable.

4.3.A Reactivity Limitations  
(Cont'd)

or partially withdrawn rod which cannot be moved and for which control rod drive mechanism damage has not been ruled out. The surveillance need not be completed within 24 hours if the number of inoperable rods has been reduced to less than 3 and if it has been demonstrated that control rod drive mechanism collet housing failure is not the cause of an immovable control rod.

- b. The scram discharge volume drain and vent valves shall be verified open at least once per month. These valves may be closed intermittently for testing.
- c. At least once every 3 months verify that the scram discharge volume drain and vent valves closed within 15 seconds after receipt of a closure signal, and reopen upon reset of the closure signal.
- d. A second licensed operator shall verify the conformance to Specification 3.3.A.2d before a rod may be bypassed in the Rod Sequence Control System.

3.3 & 4.3 BASES (Cont'd)

identified as the resistance to drive motion by an internal control rod drive filter. The filter had been loaded by foreign material, probably accelerated by construction debris. The sudden changes in drive scram performance which were observed at that plant were due to stepwise release into reactor coolant of particulate matter as the reactor and subsystem were subsequently started up. The design of the present control rod drive (Model 7RDB144B) is grossly improved by the relocation of the filter to a location out of the scram drive path; i.e., it can no longer interfere with scram performance, even if completely blocked.

The degraded performance of the original drive (CRD7RDB144A) under dirty operating conditions and the insensitivity of the redesigned drive (CRD7RDB144B) has been demonstrated by a series of engineering tests under simulated reactor operating conditions. The successful performance of the new drive under actual operating conditions has also been demonstrated by consistently good in-service test results for plants using the new drive and may be inferred from plants using the older model drive with a modified (larger screen size) internal filter which is less prone to plugging. Data has been documented by surveillance reports in various operating plants. These include Oyster Creek, Monticello, Dresden 2 and Dresden 3. Dresden 2 has currently 27 "B" type drives. Approximately 4718 drive tests have been recorded to date. Data documenting the successful performance of the modified drive has been submitted to the NRC with a letter from Commonwealth Edison Company to the Commission dated November 6, 1972 with the subject of the letter being Proposed Changes to Quad-Cities Power Station Operating License, including Appendices A and B, DPR 29 and 30, AEC Dkts 50-254 and 50-265.

Although the cause and cure of the dirt problem were known at the time of the writing of the Dresden 3 Tech Specs, the progressive surveillance requirement was incorporated into the technical specification to ostensibly detect any other unforeseen drive problems. The possibility of this being a temporary requirement may be inferred from the provision for review of all surveillance requirements after the first operating cycle.

Operability of the scram discharge volume vent and drain valves is necessary for maintaining a reservoir to contain the water exhausted from all control rod drives during a scram.



UNITED STATES  
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PHILADELPHIA ELECTRIC COMPANY  
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DELMARVA POWER AND LIGHT COMPANY  
ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-278

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 88  
License No. DPR-56

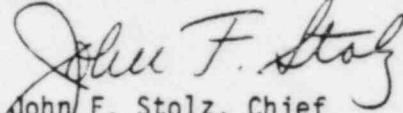
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company, et al. (the licensee) dated October 14, 1980, as supplemented October 7, 1981, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-56 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 88, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 1983

ATTACHMENT TO LICENSE AMENDMENT NO. 88

FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

<u>Remove</u>	<u>Insert</u>
42	42
73	73
—	74a (new page)
83	83*
92	92
100	100
112	112

\*Overleaf page provided for document completeness.



TABLE 4.1.1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS  
 MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS

	Group (2)	Functional Test	Minimum Frequency (3)
High Water Level In Scram Discharge Tank	A	Trip Channel and Alarm	Every 1 month.
Turbine Condenser Low Vacuum (6)	B2	Trip Channel and Alarm (4)	Every 1 month (1).
Main Steam Line High Radiation	B1	Trip Channel and Alarm (4)	Once/week.
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Every 1 month (1).
Turbine Control Valve EHC Oil Pressure	A	Trip Channel and Alarm	Every 1 month.
Turbine First Stage Pressure Permissive	A	Trip Channel and Alarm	Every 3 months (1).
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Every 1 month (1).
*Reactor Pressure Permissive (6)	B2	Trip Channel and Alarm (4)	Every 3 months.
**Reactor Pressure Permissive	A	Trip Channel and Alarm	Every 3 months.

\* Deleted when modifications authorized by Amendment No. 67 are completed.

\*\* Effective when modifications authorized by Amendment No. 67 are completed.

TABLE 3.2.C  
INSTRUMENTATION THAT INITIATES CONTROL ROD BLOCKS

Minimum No. of Operable Instrument Channels Per Trip System	Instrument	Trip Level Setting	Number of Instrument Channels Provided by Design	Action
2	APRM Upscale (Flow Biased)	$\leq (0.66W + 42 - 0.66\Delta W) \times \frac{FRP}{MFLPD} \quad (2)$	6 Inst. Channels	(1)
2	APRM Upscale (Startup Mode)	$\leq 12\%$	6 Inst. Channels	(1)
2	APRM Downscale	$\geq 2.5$ indicated on scale	6 Inst. Channels	(1)
1 (7)	Rod Block Monitor (Flow Biased)	$\leq (0.66W + 41 - 0.66\Delta W) \times \frac{FRP}{MFLPD} \quad (2)$	2 Inst. Channels	(1)
1 (7)	Rod Block Monitor Downscale	$\geq 2.5$ indicated on scale	2 Inst. Channels	(1)
3	IRM Downscale (3)	$\geq 2.5$ indicated on scale	8 Inst. Channels	(1)
3	IRM Detector not in Startup Position	(8)	8 Inst. Channels	(1)
3	IRM Upscale	$\leq 100$ indicated on scale	8 Inst. Channels	(1)
2 (5)	SRM Detector not in Startup Position	(4)	4 Inst. Channels	(1)
2 (5) (6)	SRM Upscale	$\leq 10^5$ counts/sec.	4 Inst. Channels	(1)
1	Scram Discharge Volume High Level	$\leq .25$ gallons	1 Inst. Channel	(9)



NOTES FOR TABLE 3.2.C (Cont.)

9. If the number of operable channels is less than required by the minimum operable channels per trip function requirement, place the inoperable channel in the tripped condition within one hour. This note is applicable in the "Run" mode, "Startup" mode and "Refuel" mode if more than one control rod is withdrawn.

TABLE 4.2.C

MINIMUM TEST AND CALIBRATION FREQUENCY FOR CONTROL ROD BLOCKS ACTUATION

<u>Instrument Channel</u>	<u>Instrument Functional Test</u>	<u>Calibration</u>	<u>Instrument Check</u>
1) APRM - Downscale	(1) (3)	Once/3 months	Once/day
2) APRM - Upscale	(1) (3)	Once/3 months	Once/day
3) IRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
4) IRM - Downscale	(2) (3)	Startup or Control Shutdown	(2)
5) RBM - Upscale	(1) (3)	Once/6 months	Once/day
6) RBM - Downscale	(1) (3)	Once/6 months	Once/day
7) SRM - Upscale	(2) (3)	Startup or Control Shutdown	(2)
8) SRM - Detector Not in Startup Position	(2) (3)	Startup or Control Shutdown	(2)
9) IRM - Detector Not in Startup Position	(2) (3)	Startup or Control Shutdown	(2)
10) Scram Discharge Volume - High Level	Quarterly	Once/Operating Cycle	NA
<u>Logic System Functional Test (4) (6)</u>		<u>Frequency</u>	
(1) System Logic Check		Once/6 months	

TABLE 4.2.D

MINIMUM TEST AND CALIBRATION FREQUENCY FOR RADIATION MONITORING SYSTEMS

<u>Instrument Channels</u>	<u>Instrument Functional Test</u>	<u>Calibration</u>	<u>Instrument Check (2)</u>
1) Refuel Area Exhaust Monitors - Upscale	(1)	Once/3 months	Once/day
2) Reactor Building Area Exhaust Monitors - Upscale	(1)	Once/3 months	Once/day
3) Off-Gas Radiation Monitors	(1)	Once/3 months	Once/day
<u>Logic System Functional Test (4) (6)</u>	<u>Frequency</u>		
1) Reactor Building Isolation	Once/6 months		
2) Standby Gas Treatment System Actuation	Once/6 months		
3) Steam Jet Air Ejector Off-Gas Line Isolation	Once/6 months		

## 3.2 BASES (Cont'd)

The APRM rod block function is flow biased and prevents a significant reduction in MCPR, especially during operation at reduced flow. The APRM provides gross core protection; i.e., limits the gross core power increase from withdrawal of control rods in the normal withdrawal sequences. The trips are set so that MCPR is maintained greater than the fuel cladding integrity safety limit.

The REM rod block function provides local protection of the core; i.e., the prevention of boiling transition in the local region of the core, for a single rod withdrawal error from a limiting control rod pattern.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level.

A downscale indication on an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in the control rod motion and thus, control rod motion is prevented. The downscale trips are set at 2.5 indicated on scale.

The flow comparator components have only one logic channel and are not required for safety. The flow comparator must be bypassed when operating with one recirculation water pump.

The refueling interlocks also operate one logic channel, and are required for safety only when the mode switch is in the refueling position.

High water level in the scram discharge volume may be indicative of excessive scram valve leakage, or plugging or closing of the discharge volume drain valve, and could jeopardize the ability of all rods to fully insert on a scram signal.

For effective emergency core cooling for small pipe breaks, the HPCI system must function since reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The automatic pressure relief function (ADS) is provided as a backup to the HPCI in the event the HPCI does not operate. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

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LIMITING CONDITIONS FOR OPERATIONSURVEILLANCE REQUIREMENTS3.3.A Reactivity Limitations  
(Cont'd)

failure is not due to a failed control rod drive mechanism collet housing.

- b. The control rod directional control valves for inoperable control rods shall be disarmed electrically and the control rods shall be in such positions that Specification 3.3.A.1 is met.
- c. Control rods with scram times greater than those permitted by Specification 3.3.C.3 are inoperable, but if they can be inserted with control rod drive pressure they need not be disarmed electrically.
- d. Control rods with a failed "Full-in" or "Full-out" position switch may be bypassed in the Rod Sequence Control System and considered operable if the actual rod position is known. These rods must be moved in sequence to their correct positions (full in on insertion or full out on withdrawal.)
- e. Control rods with inoperable accumulators or those whose position cannot be positively determined shall be considered inoperable.

4.3.A Reactivity Limitations  
(Cont'd)

or partially withdrawn rod which cannot be moved and for which control rod drive mechanism damage has not been ruled out. The surveillance need not be completed within 24 hours if the number of inoperable rods has been reduced to less than 3 and if it has been demonstrated that control rod drive mechanism collet housing failure is not the cause of an immovable control rod.

- b. The scram discharge volume drain and vent valves shall be verified open at least once per month. These valves may be closed intermittently for testing.
- c. At least once every 3 months verify that the scram discharge volume drain and vent valves closed within 15 seconds after receipt of a closure signal, and reopen upon reset of the closure signal.
- d. A second licensed operator shall verify the conformance to Specification 3.3.A.2d before a rod may be bypassed in the Rod Sequence Control System.

3.3 & 4.3 BASES (Cont'd)

identified as the resistance to drive motion by an internal control rod drive filter. The filter had been loaded by foreign material, probably accelerated by construction debris. The sudden changes in drive scram performance which were observed at that plant were due to stepwise release into reactor coolant of particulate matter as the reactor and subsystem were subsequently started up. The design of the present control rod drive (Model 7RDB144B) is grossly improved by the relocation of the filter to a location out of the scram drive path; i.e., it can no longer interfere with scram performance, even if completely blocked.

The degraded performance of the original drive (CRD7RDB144A) under dirty operating conditions and the insensitivity of the redesigned drive (CRD7RDB144B) has been demonstrated by a series of engineering tests under simulated reactor operating conditions. The successful performance of the new drive under actual operating conditions has also been demonstrated by consistently good in-service test results for plants using the new drive and may be inferred from plants using the older model drive with a modified (larger screen size) internal filter which is less prone to plugging. Data has been documented by surveillance reports in various operating plants. These include Oyster Creek, Monticello, Dresden 2 and Dresden 3. Dresden 2 has currently 27 "B" type drives. Approximately 4718 drive tests have been recorded to date. Data documenting the successful performance of the modified drive has been submitted to the NRC with a letter from Commonwealth Edison Company to the Commission dated November 6, 1972 with the subject of the letter being Proposed Changes to Quad-Cities Power Station Operating License, including Appendices A and B, DPR 29 and 30, AEC Dkts 50-254 and 50-265.

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Operability of the scram discharge volume vent and drain valves is necessary for maintaining a reservoir to contain the water exhausted from all control rod drives during a scram.