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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-295

ZION STATION UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56
License No. DPR-39

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated March 21, 1975, supplemented by letters of December 19, 1978 and April 28, 1980, 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-39 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 56 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of September 1, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 8, 1980

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

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-304

ZION STATION UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 53
License No. DPR-48

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Commonwealth Edison Company (the licensee) dated March 21, 1975, supplemented by letters of December 19, 1978 and April 28, 1980, 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 (1) 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-48 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 53 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of September 1, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 8, 1980

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. DPR-39

AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. DPR-48

DOCKET NOS. 50-295 AND 50-304

Revise Appendix A as follows:

Remove Pages	Insert Pages
iv	iv
ix	ix
x	x
180	180
181	181
182	182
194	194
244	244
244A	244A
245	245
249	249
281	281
282	282
284	284
285	285
286	286
288	288

Amendment No. 56, Unit 1
Amendment No. 53, Unit 2

LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.8.8 Hydrogen control systems	4.8.8. Hydrogen control systems (Table 4.8-7)
A. Hydrogen purge fans	A. Hydrogen purge fans
1. The two hydrogen purge fan systems shall be operable whenever the reactor is critical except as specified in 3.8.8.A.2.	1. The hydrogen purge fans shall be started manually from the control room every 31 days. Performance will be acceptable if the fan starts upon actuation and operates for 15 minutes.
2. From and after the date that one of the hydrogen purge fan systems is made or found to be inoperable for any reason, reactor operation including recovery from an inadvertent trip is permissible only during the succeeding 15 days provided that during those 15 days the one remaining system shall be operable.	2. When it is determined that one of the two hydrogen purge fan systems is inoperable, the remaining systems shall be demonstrated to be operable immediately and daily thereafter.
3. If these conditions cannot be met, the reactor shall be brought to the hot shutdown condition within four hours. After a maximum of 48 hours in the hot shutdown condition, if the system is not operable, the reactor shall be brought to the cold shutdown condition within 24 hours.	3. Not applicable.

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.8.8.A.	4.8.8.A.
4. Hydrogen purge filters shall be periodically tested.	4. For each HEPA or charcoal filter, at least once per 18 months or (1) after every 720 hours of charcoal adsorber operation or (2) after any structural maintenance of the filter housings or (3) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (4) after each complete or partial replacement of the filter bank, surveillance will be performed per Table 4.17-1.
B. Hydrogen recombiners	B. Hydrogen recombiners
1. The two hydrogen recombiner systems shall be operable whenever the reactor is critical except as specified in 3.8.8.B.2.	1. The hydrogen recombiner systems shall be functionally tested every six months. Performance will be acceptable if the heaters energize and bring the system to operating temperature, the blower works, and the instruments indicate proper operation.
2. From and after the date that one of the hydrogen recombiner systems is made or found to be inoperable for any reason, reactor operation, including recovery from an inadvertent trip, is permissiable only during the succeeding 15 days provided that during those 15 days, the one remaining system shall be operable.	2. When it is determined that one of the two hydrogen recombiner systems is inoperable, the remaining system shall be demonstrated to be operable immediately.

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION		SURVEILLANCE REQUIREMENT	
3.8.8.B	3. If these conditions cannot be met the reactor shall be brought to the hot shutdown condition within four hours. After a maximum of 48 hours in the hot shutdown condition, if the system is not operable the reactor shall be brought to the cold shutdown condition within 24 hours.	4.8.8.B.	3. Not Applicable.

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The availability of the systems is demonstrated by immediately demonstrating the operability of the components redundant to the failed one, as well as the operability of the inter-related systems and the standby AC and DC power supplies that feed them. The continued availability of these components during the repair period is demonstrated by repeating these tests daily.

Assuming a reactor has been operating at full rated power for at least 100 days, the magnitude of the decay heat decreases after initiating hot shutdown. Thus, the requirement for core cooling in case of a postulated loss-of-coolant accident while in the hot shutdown condition is significantly reduced below the requirements for a postulated loss-of-coolant accident during power operation. Putting a reactor in the hot shutdown condition significantly reduces the potential consequences of a loss-of-coolant accident, and also allows more free access to some of the engineered safeguards components in order to effect repairs

Failure to complete repairs within an additional 48 hours of going to the hot shutdown condition is considered indicative of a requirement for major maintenance and therefore in such a case, the reactor is to be put into the cold shutdown condition.

The limits for the boron injection tank and refueling water storage tank insure the required amount of water with the required boron concentration for injection into the primary coolant system following a loss-of-coolant accident and are based on the values used for the accident analysis. (4)

The limits for the accumulators, and their pressure and volume assure the required amount of water injection with the required boric acid concentration following a loss-of-coolant accident, and are based on the values used for the accident analyses. (4)

The five component cooling system pumps and three heat exchangers are located in the Auxiliary Building and are a shared system between Units I and II. The components are accessible for repair after a loss-of-coolant accident. During the recirculation phase following a loss-of-coolant accident on a unit, only one component cooling pump and heat exchanger is required for minimum safeguard of that unit. Therefore, a minimum requirement of 4 component cooling pumps and three heat exchangers for two operating units provides sufficient redundancy. (5)

A total of six service water pumps are installed; only one service water pump is required immediately following a postulated loss-of-coolant accident. (6)

The hydrogen purge system is designed to purge combustible gases from the containment following a loss-of-coolant accident (7)(8). The containment hydrogen sampling system is used to determine the effectiveness of this system. The instrumentation, equipment and procedures for the tests which are required on the ventilation filter system will generally conform to the recommendations of ANSI N510-1975.

LIMITING CONDITION FOR OPERATION			SURVEILLANCE REQUIREMENT		
3.13.1.B.		fuel is in the reactor, neutron flux shall be monitored continuously by at least one source range neutron monitor with both visual and audible indication.	4.13.1		
	C.	The movement of an irradiated fuel assembly in the reactor core shall not begin until the reactor has been subcritical for a period of at least 100 hours.		C.	Not applicable.
	D.	A least one RHR pump and heat exchanger shall be in operation during a refueling operation.		D.	The operation of at least one RHR pump and heat exchanger shall be verified once a shift.
	E.	Direct communication between the control room and containment shall be operable.		E.	Communication between the control room and the containment shall be verified before any alteration of the reactor core begins.
	F.	A licensed fuel handling foreman or licensed senior reactor operator shall be present at the reactor cavity during any movement of fuel within the containment.		F.	Not applicable.
3.13.	2.	Protection from Damaged Spent Fuel	4.13	2.	Protection from Damaged Spent Fuel
	A.	During irradiated fuel movement or crane operation with loads over irradiated fuel in the fuel building, the fuel building exhaust system shall be:		A.	The charcoal adsorber mode of operation of fuel building exhaust system shall be demonstrated to be operable:

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.13.2. 1. Operating with ventilation flow through the HEPA and charcoal filters if there is any irradiated fuel stored in the pool with less than 60 days decay time.	4.13.2 A. 1. When operability is required by Specification 3.13.2.A.1, by observing and documenting at least once per shift, that the ventilation system is operating as required by Specification 3.13.2.A.
2. Operable with automatic initiation of flow through the HEPA filters and charcoal absorbers upon detection of high radiation at the fuel pool if all irradiated fuel stored in the pool has 60 days or greater decay time since irradiation ceased. If automatic actuation is inoperable, the system shall be manually placed in the "charcoal adsorber mode".	2. When operability is required by Specification 3.13.2.A.2, the following shall be done at least once per 31 days: 1) Place the Fuel Building Ventilation System in the Fuel Handling Mode for a minimum of 15 minutes, 2) Verify flow through the HEPA and charcoal adsorber train, 3) Verify the Fuel Building is maintained at ¼ inch of water negative pressure with respect to the atmosphere.
B. If requirements of Specification 3.13.2.A., above, cannot be met, irradiated fuel movements or crane operation with loads over irradiated fuel shall be terminated after first, if applicable, placing loads in a safe condition.	B. Not Applicable

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION		SURVEILLANCE REQUIREMENT	
3.13.2	C. Ventilation filters for the fuel building including charcoal adsorbers and the automatic actuation of the charcoal filter system shall be periodically tested.	4.13.2	C. For each HEPA or charcoal filter, at least once per 18 months or (1) after every 720 hours of charcoal adsorber operation or (2) after any structural maintenance of the filter housings or (3) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (4) after each complete or partial replacement of the filter bank, surveillance will be performed per Table 4.17-1. 1. Verify that on a high radiation test signal the system automatically starts (unless already in operation) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks. If automatic actuation is inoperable the system shall be manually placed in the charcoal adsorber mode.
3.13.3	Containment status A. During refueling operations containment integrity (See section 1.0.C) shall be maintained as specified in section 3.9.5 except as specified in 3.13.3.B. B. The equipment hatch or both doors on the personnel hatch may be opened during the refueling operation provided the shutdown margin is maintained equal to or greater than 10% $\Delta K/K$ and Tavg is maintained at or less than $140^{\circ}F$.	4.13.3	Containment status A. Containment door status shall be verified once a shift. B. Reactor coolant boron concentration and Tavg shall be verified once a shift when the equipment hatch is open or both doors on the personnel hatch are open.

Amendment No. 56, Unit 1
Amendment No. 53, Unit 2

Basis:

4.13 The surveillance specified ensures that the required condition of core reactivity are met and maintained during core alterations.

The surveillance of the containment, ventilation system, and radiation monitors ensures the availability of these systems such that the limits of 10CFR100 will not be exceeded during the postulated fuel drop accident.

The instrumentation, equipment and procedures for the tests which are required on the ventilation filter system will generally conform to the recommendations of ANSI N510-1975.

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.17 Ventilation	4.17 Ventilation
3.17.1 Applicability Applies to the testing of particulate filters and charcoal adsorbers in safety-related air filtration systems.	4.17.1 Applicability Applies to the testing of particulate filters and charcoal adsorbers in safety-related air filtration systems.
Objective To verify that leakage efficiency and iodine removal efficiency are within acceptable limits.	Objective To verify that leakage efficiency and iodine removal efficiency are within acceptable limits.
Specification Safety-related ventilation filters shall be periodically tested.	Specification
A. The control room makeup air charcoal adsorber system shall be operable except as specified in 3.17.1.B.	A. The control room makeup air charcoal adsorber system shall be demonstrated operable. The control room charcoal booster fans shall be started from the control room every 31 days. Performance will be acceptable if the fan starts upon actuation and directs air through the charcoal adsorbers and operates for 15 minutes.
B. From and after the date that the control room makeup air charcoal adsorber system is made or found inoperable for any reason restore the system to operable status within 7 days or be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.	B. Not Applicable.

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Amendment No. 53, Unit 2

LIMITING CONDITION FOR OPERATION		SURVEILLANCE REQUIREMENT	
3.17.1.	C. The control room makeup, drumming station and miscellaneous vents charcoal filter systems shall be periodically tested.	4.17.1.	C. For each HEPA or charcoal filter, at least once per 18 months or (1) after every 720 hours of charcoal adsorber operation or (2) after any structural maintenance of the filter housings or (3) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (4) after each complete or partial replacement of the filter bank, surveillance will be performed per Table 4.17-1.
	D. HEPA filters shall be periodically tested.		D. The HEPA filter banks specified in Table 4.17-2 shall be tested at least once per 18 months. Acceptance criteria shall be per Table 4.17-2.

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PARAMETER \ FILTER	HYDROGEN PURGE	FUEL/AUXILIARY		CONTROL ROOM MAKEUP		DRUMMING STATION	MISCELLANEOUS VENTS
BANKS	1RV046 1RV047 2RV046 2RV047	0AV038 0AV039	0AV040 0AV041	0PV005 UPSTREAM	0PV005 DOWNSTREAM	0AV043	0AV069
# of Elements per Bank	3	42	91	8	6	16	8
Acceptance Criteria* a) In-place HEPA	≥ 99%	≥ 99%	-	≥ 99%	-	≥ 99%	≥ 99%
b) In-place Charcoal	≥ 99.95%	-	≥ 99.95%	≥ 99.95%	≥ 99.95%	≥ 99.95%	≥ 99.95%
c) Flow rates (CFM)	360 ± 10%	16500 ± 10%		2000 ± 10%		4000 ± 10%	2000 ± 10%
d) System Pressure Drops (inches of Water)	< 6	< 6	< 6	< 6		< 6	< 6
Laboratory Analyses** for Charcoal Adsorbers	e ≥ 99% at T ≥ 190° & RH ≥ 70%	- - - - -	e ≥ 95% at T ≥ 125°F & RH ≥ 95%	e ≥ 99% at T ≥ 190°F & RH ≥ 70%		e ≥ 90% at T ≥ 190°F & RH ≥ 95%	e ≥ 90% at T ≥ 190°F & RH ≥ 95%

* Acceptance Criteria: See page 285

** Laboratory Analysis: See page 285

HEPA/Charcoal Filter Systems Surveillance Requirements
Table 4.17-1

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Footnotes from page 284

* Acceptance Criteria

a) In-Place HEPA: These filter banks will remove greater than or equal to the specified amount of dioctyl phthalate (DOP) when tested "in-place".

b) In-Place Charcoal: These adsorbers will remove the specified amount of halogenated refigerant test gas when tested "in-place".

c and d) Flow Rates and Pressure Drops: The flow rates and pressure drops apply to the complete HEPA/Charcoal System. The total bypass flow of the sytem to the facility vent, including leakage through the system diverting valves, is less than or equal to one percent.

** Laboratory Analysis

At least two carbon samples, one from each of the specified charcoal adsorbers, will be analyzed to verify the designated removal efficiency, e, of an activated methyl iodine at the specified temperature, T, and relative humidity, RH. The carbon samples will be prepared by emptying one bed from a removal adsorber tray, mixing the adsorbent thoroughly and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed. Instrumentation, equipment and procedures for carbon samples tested at the laboratory will generally conform to the recommendations in ANSI N510-1975. The Control Room make-up efficiency, e, is as stated in answer to Question 9.8 in Amendment No. 17 of the Zion FSAR. The Hydrogen Purge efficiency, e, is as stated in answer to Question 14.2 in Amendment No. 20 of the Zion FSAR.

HEPA/Charcoal Filter Systems Surveillance Requirements

Table 4.17-1 (continued)

Filters				Surveillance Requirements	
System	Banks	Number of Elements	Location	Frequency (months)	Acceptance Criteria (% DOP Removed)
Auxiliary Building Exhaust	OAV029	42	Fan Room, 642'	18	$\geq$ 99%
	OAV030	42	Fan Room, 642'	18	$\geq$ 99%
	OAV031	42	Fan Room, 642'	18	$\geq$ 99%
	OAV032	42	Fan Room, 642'	18	$\geq$ 99%
	OAV033	42	Fan Room, 642'	18	$\geq$ 99%
	OAV034	42	Fan Room, 642'	18	$\geq$ 99%
Cubicles Exhaust	OAV035	24	Fan Room, 642'	18	$\geq$ 99%
	OAV036	24	Fan Room, 642'	18	$\geq$ 99%
	OAV037	24	Fan Room, 642'	18	$\geq$ 99%
Inst. Calib. Room	OAV042	1	Col. L-14, 592'	18	$\geq$ 99%
Hot Lab Exhaust	OOV048	6	Purge Room 2, 617'	18	$\geq$ 99%
Decon Room Exhaust	OOV011	2	Fan Room, 617'	18	$\geq$ 99%
Containment Purge Exhaust	1RV030	42	Purge Room 1, 617'	18	$\geq$ 99%
	2RV030	42	Purge Room 2, 617'	18	$\geq$ 99%

Particulate Filter Surveillance Requirements
Table 14.17-2

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Basis

4.17 The off-site dose calculation for LOCA and fuel handling accidents assume a 90% iodine removal efficiency for the air passing through the charcoal filters, with the exception of the hydrogen purge filters which assume a 99% efficiency. (1) The system components are not subject to rapid deterioration, having lifetimes of many years even under continuous flow conditions. A demonstration of efficiency per table 4.17-1 will assure that the required capability of the filters is met or exceeded. In addition, the chemical analysis tests of iodine removal capability will ensure early detection of conditions leading to filter degradation. The instrumentation, equipment and procedures for the tests which are required on the ventilation filter system will generally conform to the recommendations of ANSI N510-1975.

(1) FSAR Answer to Question 14.2

Amendment No. 56, Unit 1
Amendment No. 53, Unit 2