

MAY 20 1981

Docket No.: 50-311

Mr. R. L. Mittl, General Manager
Licensing and Environment
Engineering and Construction Department
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101



Dear Mr. Mittl:

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 - ISSUANCE OF FACILITY OPERATING LICENSE DPR-75

The Nuclear Regulatory Commission has issued the enclosed Facility Operating License DPR-75 to the Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company for the Salem Nuclear Generating Station, Unit No. 2, located in Salem County, New Jersey. License No. DPR-75 authorizes operation of the Salem Nuclear Generating Station, Unit No. 2 at 100 percent power (3411 megawatts thermal).

Also enclosed are copies of the related Supplement No. 6 to the Safety Evaluation Report and a copy of the Federal Register Notice, which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosures:

1. Facility Operating License No. DPR-75 with Appendices A and B (Technical Specifications)
2. Supplement No. 6 to Safety Evaluation Report
3. Federal Register Notice

cc: See next page

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DL#3 Meyer 5/20/81	OELD J. Moore 5/20/81	DL#3 FMiraglia 5/20/81	DL AD/L RL Redeco 4/20/81	DL DIR DEisenhut 4/20/81	NRR DIR HR Denton 5/2/81
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UNITED STATES NUCLEAR REGULATORY COMMISSION
DOCKET NO. 50-311
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. DPR-75, issued to the Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and the Atlantic City Electric Company, which authorizes operation of the Salem Nuclear Generating Station, Unit 2 at reactor core power levels not in excess of 3411 megawatts thermal (100% power) in accordance with the provisions of the license and the Technical Specifications.

The Salem Nuclear Generating Station, Unit 2 is a pressurized water nuclear reactor located at the licensees' site in Salem County, New Jersey. The license is effective as of its date of issuance.

The application for the license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which are set forth in the license. Prior public notice of the overall action involving the proposed issuance of an operating license was issued in the Federal Register on October 20, 1972 (37 F. R. 22637).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement since the activity authorized by this license is encompassed by the overall action evaluated in the Final Environmental

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DATE ▶

For further details with respect to this action, see (1) Facility Operating License No. DPR-75, complete with Technical Specifications; (2) License for Fuel Load and Low Power Testing dated April 18, 1980 and amendments thereto; (3) the reports of the Advisory Committee on Reactor Safeguards dated February 15, February 22 and August 14, 1979; (4) the Commission's Safety Evaluation Report (NUREG-0517) dated October 1974, Supplement 1 dated June 1976, Supplement 2 dated August 1976, Supplement 3 dated December 1978, Supplement 4 dated April 1980, Supplement 5 dated January 1981, and Supplement 6 dated May 1981; and (5) the Final Safety Analysis Report, docketed August 1971 and amendments thereto; (6) the Environmental Report prepared by Public Service Electric & Gas Company dated June 30, 1970, as supplemented and amended; (7) the Commission's Final Environmental Statement dated April 1973, (8) the NRC Flood Plain Review of the Salem Nuclear Generating Station Site dated April 18, 1980; and (9) the Discussion of the Environmental Effects of the Uranium Fuel Cycle dated 5/20/81.

These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the local public document room in the Salem Free Public Library, 112 West Broadway, Salem, New Jersey. A copy of item (1) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing, Office of Nuclear Reactor Regulation. Copies of Supplements 3, 4, 5 and 6 of NUREG-0517 may be purchased at current rates from the National Technical Information Service, Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, and through the NRC GPO sales

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program by writing to the U. S. Nuclear Regulatory Commission, Attention:
Sales Manager, Washington, D. C. 20555. GPO deposit account holders can
call 301-492-9530.

Dated at Bethesda, Maryland this 20th day of May, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Frank J. Miraglia, Acting Chief
Licensing Branch No. 3
Division of Licensing

OFFICE	DL:LB#3	DL:LB#3	OELD	DL:LB#3			
SURNAME	J Lee/wt	G Meyer	J. Moore	F Miraglia			
DATE	5/20/81	5/20/81	5/20/81	5/20/81			

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

MAY 20 1981

Docket No.: 50-311

Mr. R. L. Mittl, General Manager
Licensing and Environment
Engineering and Construction Department
Public Service Electric and Gas Company
80 Park Plaza
Newark, New Jersey 07101

Dear Mr. Mittl:

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 - ISSUANCE OF FACILITY
OPERATING LICENSE DPR-75

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Also enclosed are copies of the related Supplement No. 6 to the Safety Evaluation Report and a copy of the Federal Register Notice, which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell G. Eisenhut".

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosures:

1. Facility Operating License No. DPR-75
with Appendices A and B
(Technical Specifications)
2. Supplement No. 6 to Safety
Evaluation Report
3. Federal Register Notice

cc: See next page

Mr. R. L. Mittl

- 2 -

cc: Richard Fryling, Jr., Esq.
Assistant General Counsel
Public Service Electric & Gas Company
80 Park Place
Newark, New Jersey 07100

Mark Wetterhahn, Esq.
Conner, Moore & Corber
Suite 1050
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Mr. Leif J. Norrholm
c/o U. S. Nuclear Regulatory Commission
Drawer I
Hancocks Bridge, New Jersey 08038

Attorney General
Department of Law & Public Safety
State House Annex
Trenton, New Jersey

State House Annex
ATTN: Deputy Attorney General
State of New Jersey
36 West State Street
Trenton, New Jersey 08625

Mr. Richard B. McGlynn, Commissioner
Department of Public Utilities,
State of New Jersey
101 Commerce Street
Newark, New Jersey 07102

President
New Jersey Board of Public Utilities
101 Commerce Street
Newark, New Jersey 07102

The Honorable Samuel E. Donelson, Mayor
Lower Alloways Creek Township
Municipal Hall
Hancock's Bridge, New Jersey 08038

Mr. Eugene J. Bradley
Associate General Counsel
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Mr. Bruce Blanchard
Environmental Projects Review
Department of the Interior
Room 4256
18th and C Street, N.W.
Washington, D.C. 20240

U.S. Environmental Protection Agency
ATTN: Mr. Joseph McCabe
Office of Environmental Review
Room 2119M, A-104
401 M Street, S.W.
Washington, D.C. 20460

EIS Coordinator
U.S. Environmental Protection Agency
Region II Office
26 Federal Plaza
New York, New York 10007

Director, Criteria and Standards Division
Office of Radiation Programs (ANR-460)
U.S. Environmental Protection Agency
Washington, D.C. 20460

Defense Mapping Agency Aerospace
Center (ADL)
St. Louis Air Force Station, Missouri 63118

Mr. Frank J. Ficadenti
Senior Vice President
Engineering, Research and Development
Atlantic City Electric Company
1600 Pacific Avenue
Atlantic City, New Jersey 08404

Mr. William G. Price
Senior Vice President
Operations and Generation
Delmarva Power & Light Company
800 King Street
Wilmington, Delaware 19899



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

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

DOCKET NO. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

FACILITY OPERATING LICENSE

License No. DPR-75

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for license filed by Public Service Electric and Gas Company for itself and the Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (hereinafter referred to as the licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Salem Nuclear Generating Station, Unit No. 2 (facility) has been substantially completed in conformity with Construction Permit No. CPPR-53 and the application, as amended, the provisions of the Act and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license 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 set forth in 10 CFR Chapter I;
 - E. Public Service Electric and Gas Company is technically qualified to engage in the activities authorized by this operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

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- F. The licensees are financially qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - G. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - H. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public;
 - I. After weighing the environmental, economic, technical and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. DPR-75 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 50 Appendix D of the Commission's regulations and all applicable requirements have been satisfied; and
 - J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70.
2. Pursuant to approval by the Nuclear Regulatory Commission at meetings on January 14, 1981, April 28, 1981, and May 19, 1981, the License for Fuel-Loading and Low-Power Testing issued on April 18, 1980 is superseded by Facility Operating License No. DPR-75 hereby issued to Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (licensees) to read as follows:
- A. This license applies to the Salem Nuclear Generating Station, Unit No. 2, a pressurized water nuclear reactor and associated equipment (the facility), owned by the licensees. The facility is located on the southern end of Artificial Island on the east bank of the Delaware River in Lower Alloways Creek Township in Salem County, New Jersey and is described in the Final Safety Analysis Report as supplemented and amended and the Environmental Report as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company to possess the facility at the designated location in Salem County, New Jersey, in accordance with the procedures and limitations set forth in this license;

- (2) Public Service Electric and Gas Company, pursuant to Section 104b of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use and operate the facility at the designated location in Salem County, New Jersey, in accordance with the limitations set forth in this license;
 - (3) Public Service Electric and Gas Company, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) Public Service Electric and Gas Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source and special nuclear material 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;
 - (5) Public Service Electric and Gas Company, 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 material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (6) Public Service Electric and Gas Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and 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 I 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

Public Service Electric and Gas Company (PSE&G) is authorized to operate the facility at steady state reactor core power levels not in excess of 3411 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated into this license. PSE&G shall operate the facility in accordance with the Technical Specifications.

(3) Special Low Power Test Program

PSE&G shall complete the training portion of the Special Low Power Test Program in accordance with PSE&G's letter dated September 5, 1980 and in accordance with the Commission's Safety Evaluation Report "Special Low Power Test Program", dated August 22, 1980 (See Amendment No. 2 to DPR-75 for the Salem Nuclear Generating Station, Unit No. 2) prior to operating the facility at a power level above five percent.

Within 31 days following completion of the power ascension testing program outlined in Chapter 13 of the Final Safety Analysis Report, PSE&G shall perform a boron mixing and cooldown test using decay heat and Natural Circulation. PSE&G shall submit the test procedure to the NRC for review and approval prior to performance of the test. The results of this test shall be submitted to the NRC prior to starting up following the first refueling outage.

(4) Initial Test Program

PSE&G shall conduct the post-fuel-loading initial test program (set forth in Chapter 13 of the Final Safety Analysis Report, as amended) without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

- (a) Elimination of any test identified in Chapter 13 of the Final Safety Analysis Report, as amended, as essential;
- (b) Modification of test objectives, methods or acceptance criteria for any test identified in Chapter 13 of the Final Safety Analysis Report, as amended, as essential;
- (c) Performance of any test at a power level different by more than five percent of rated power from there described;
and

- (d) Failure to complete all tests included in the described program (planned or scheduled for power levels up to the authorized power level) prior to exceeding a core burnup of 120 effective full power days.

(5) Instrument Trip Setpoints

PSE&G shall submit for NRC review within six months of the date of issuance of this operating license the following values for each Reactor Protection System and Engineered Safety Features instrumentation channel:

- (a) the Technical Specification allowable value (the Technical Specification trip setpoint plus the instrument drift assumed in the accident analysis);
- (b) the instrument drift assumed to occur during the interval between Technical Specification surveillance tests;
- (c) the components of the cumulative instrument bias; and
- (d) the maximum margin between the Technical Specification trip setpoint and the trip value assumed in the accident analysis.

(6) SMII-6 Open Items List

Prior to exceeding five percent rated thermal power, PSE&G will resolve to the satisfaction of the NRC's Office of Inspection and Enforcement all remaining construction and testing deficiencies in the SMII-6 Open Items List designated for completion prior to the commencement of power range testing. All listed items deferred beyond the commencement of power range testing will be subject to review by NRC Region I inspectors.

(7) Compliance With Regulatory Guide 1.97

By June 1, 1983, PSE&G shall implement to the satisfaction of the NRC the provisions of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," as modified by PSE&G's commitments to NUREG-0588 and NUREG-0737.

(8) Snubbers

- (a) Within 4 months after issuance of the license, PSE&G shall provide a Technical Specification listing of mechanical snubbers. In the interim, PSE&G will conduct a comprehensive mechanical snubber inspection program implemented by plant instructions.
- (b) The functional testing of hydraulic and mechanical snubbers in accordance with Technical Specification 3.7.9 shall commence with the first refueling outage. The initial functional testing shall be completed prior to resuming power operation following the first refueling outage.

(9) Environmental Qualification (Section 3.11, Supplement 5)*

PSE&G shall take the following remedial actions, or alternative actions acceptable to the NRC, with regard to the environmental qualification requirements for Class IE equipment:

- (a) No later than June 30, 1982, the wide-range resistance temperature detectors for the reactor coolant system shall be qualified for radiation exposure for the 40-year plant life and appropriate exposure condition due to design basis accidents. Pending completion of such qualification and acceptance by the NRC, PSE&G shall replace each of these detectors at each refueling outage.
- (b) Prior to completion of the first refueling outage or June 30, 1982, whichever is earliest, PSE&G shall replace the Scotchcast No. 9 resin seals, used at the electrical connection interface on the NAMCO limit switches, with Conax Electric Conduction Seal Assemblies.
- (c) By no later than June 30, 1982, all safety-related electrical equipment in the facility shall be qualified in accordance with the provisions of: "Guidelines for Evaluating Environmental Qualification of Class IE Electrical Equipment in Operating Reactors" (DOR Guidelines); or NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," December 1979.

*References are to the appropriate sections of the Safety Evaluation Report (NUREG-0517) and its supplements.

- (d) Complete and auditable records must be available and maintained at a central location which describe the environmental qualification method used for all safety-related electrical equipment in sufficient detail to document the degree of compliance with the DOR Guidelines or NUREG-0588. Such records should be updated and maintained current as equipment is replaced, further tested, or otherwise further qualified to document complete compliance by June 30, 1982.
 - (e) Within 90 days of receipt of the equipment qualification safety evaluation, the licensee shall either (i) provide missing documentation identified in Sections 3 and 4 of the equipment qualification safety evaluation which will demonstrate compliance of the applicable equipment with NUREG-0588, or (ii) commit to corrective actions which will result in documentation of compliance of applicable equipment with NUREG-0588 no later than June 30, 1982.
- (10) Fire Protection (Section 9.7, Supplement 6)
- (a) PSE&G shall install concurrently in Salem Unit 2 all modifications to Salem Unit 1 implemented to comply with the requirements set forth in sections III.G, III.J, III.L, and III.O of Appendix R to 10 CFR Part 50.
 - (b) Prior to exceeding five percent rated thermal power, PSE&G shall:
 - (1) Wrap the primary feeds for 125 volt DC control power to the 4160 volt, 460 volt and 230 volt switchgear located above the 4160 volt switchgear at elevation 64.
 - (2) Take the following corrective action for deficiencies associated with the alternative shutdown capability.
 - (i) Coordinate operating procedures to ensure application of the appropriate alternative method when dictated by plant circumstance or conditions.
 - (ii) Provide direction to the Senior Shift Supervisor as to when control room evacuation is dictated; provide direction as to which procedures, keys, operator aids, and equipment will be required in the new control location; and provide a discussion of shift organization and personnel deployment for remote operation.

- (iii) Provide for pre-staging of the special equipment or tools required by local operating procedures. These items include hand tools, pneumatic jumpers, prepared electrical jumpers, and diesel control power cables.
 - (iv) Provide a means to maintain system status once local operation has been initiated and to restore normal function to disturbed control systems.
 - (v) Provide guidance for ensuring or verifying adequate shutdown margin when outside the control room.
 - (vi) Provide a means to obtain direct temperature from the hot and cold legs during cooldown as part of the alternate shutdown procedures.
 - (vii) Implement adequate measures to ensure that effective communications with alternative shutdown control stations can be established.
- (c) PSE&G shall install adequate 8 hour emergency lighting, independent of plant power systems, at all locations which may be required to be manned during the alternate shutdown procedure as well as at all avenues of entrance to and egress from those areas. The emergency lighting shall be installed prior to exceeding five percent power or a continuous fire watch shall be established in the relay room and sufficient dedicated portable battery powered lighting shall be provided for the operating personnel necessary to achieve cold shutdown.
- (d) By July 31, 1981, PSE&G shall:
- (1) Modify or extend existing barriers in 4160 volt switchgear room in order to protect redundant control and power cables currently located above fire barrier;

- (2) Provide a one-hour barrier for the cable trays associated with the turbine-driven auxiliary feedwater pump in the auxiliary feedwater pump room;
- (3) Provide a one-hour barrier around one of the redundant cables associated with power, instrumentation, and control for the diesel generators (located in the proximity of the diesel generators) where separation is less than 20 feet.
- (4) Provide smoke detectors in the area of the power feeds to redundant diesel generators in the 4 ft. wide hallway near the waste gas tanks.
- (5) Wrap redundant cables supplying power to the 4 kv switchgear from the diesel generators in the 4 kv switchgear room where separations is less than 20 feet.
- (6) Wrap redundant cables supplying power from 230 volt switchgear to the battery chargers where separation is less than 20 feet.
- (7) Raise barriers separating equipment needed for shutdown so that the top of the barrier is above the top of the redundant raceways or wrap both redundant raceways in the following areas: 460-230 volt switchgear, 125 volt D-C switchgear, the valve motor control centers located in the electrical penetration area, and the pressurizer heater buses located in the electrical penetration area.
- (8) Extend barrriers in an "L" shape configuration for the following equipment: the 4160 volt switchgear, 460-230 volt switchgear, the 125 V DC switchgear, the valve motor control centers, and the pressurizer heater buses.

- (9) Wrap one of the redundant power cables from the diesel generators located in the fuel oil storage tank room.
 - (10) Provide one hour fire barrier for the 207 panel or the turbine driven auxiliary feedwater control cabinet.
 - (11) Provide a one hour fire barrier for the remote shutdown panel.
 - (12) PSE&G shall review its Fire Interaction analysis for any additional areas impacted by the assumptions and criteria identified in the NRC review team's report as being inconsistently applied or with which the team did not concur. PSE&G shall report the results of this review to the NRC and complete all additional corrective actions by July 31, 1981.
- (e) By June 5, 1981, PSE&G shall re-route the alternate shutdown power feed in order to provide protection for this cable from a fire affecting the normal instrument trains. Until this modification is complete a continuous fire watch shall be stationed in the elevation 84 switchgear room. During the period when new leads are being landed, and no power feed to the alternate shutdown instruments is available, an additional fire watch shall be stationed continuously in the Relay Room.
- (f) By July 15, 1981, PSE&G shall complete final engineering verification of the fire protection analysis and corrective actions.
- (g) During the performance of Startup Procedure SUP 82.5, Shutdown From Outside Control Room, PSE&G shall satisfactorily demonstrate the following additional operations:
- (1) Local start of diesel generator using alternative control power source.

- (2) Local operation of 4 KV breaker.
 - (3) Local start of the containment fan cooler unit.
 - (4) Local operation of a motor operated and an air operated valve.
 - (5) Local control of charging.
 - (h) Prior to July 31, 1981, PSE&G shall complete all required cable wrapping.
- (11) Containment Isolation (Section 6.2.3, Supplements 4 and 5)

Within 90 days after issuance of the license, PSE&G shall demonstrate to the satisfaction of the NRC that the present containment isolation provisions for the main feedwater lines comply with the requirements of General Design Criterion 57 under all postulated accident conditions, or propose a design change that will achieve compliance. If necessary, the design change shall be implemented during the first refueling outage.

- (12) Main Condenser (Section 14.0, Supplement 4)

Prior to exceeding 50 percent power, PSE&G shall complete the preoperational testing of the remaining three of six circulators to be tested in the main condenser for the circulating water system.

- (13) River Traffic Accidents (Section 2.2.1, Supplement 1)

PSE&G shall also report for the Salem facility any information reported for the Hope Creek facility relating to circumstances which suggest that the risk from flammable gas clouds (resulting from river traffic accidents on the Delaware River) varies significantly from that previously considered.

(14) Waterhammer Test (Appendix C, A-1, Supplement 4 and Section 22.2, II.E.1.1, Supplement 5)

Prior to exceeding 90 percent power, PSE&G shall perform a test program to show that unacceptable waterhammer damage will not result from anticipated feedwater transients to the steam generator. Prior to performing the test program, PSE&G shall obtain NRC approval of the test procedures.

(15) Prior to resuming power operation following the first refueling outage:

(a) Control Rod Guide Thimble (Section 4.2.2, Supplement 4)

PSE&G shall submit the details of the inspection program for control rod guide thimble tube wall wear for NRC approval.

(b) Inspection Ports (Section 5.2.5, Supplement 5)

PSE&G shall install inspection ports in the steam generators.

(c) Pressure Isolation Valves (Section 5.3.2, Supplement 5)

PSE&G shall install leak test connections on the pressure isolation valves; until installation of the leak test connections, PSE&G may substitute multiple valve leak tests for Technical Specification 3.4.7.2.f, such that the cumulative leakage from two valves in parallel lines shall not exceed two gallons per minute, and the cumulative leakage from three valves in parallel lines shall not exceed three gallons per minute.

(d) Diesel Generator Reliability (Section 8.3.4, Supplement 5)

PSE&G shall implement the following design and procedural modifications with respect to diesel generator reliability:

- (i) Complete a formal training program for all the mechanical and electrical maintenance and quality control personnel, including supervisors, who are responsible for the maintenance and availability of the diesel generators. The depth and quality of this training program shall be at least equivalent to that of training programs normally conducted by major diesel engine manufacturers.

(ii) Develop operating procedures that require loading the diesel engine to a minimum of 25 percent of full load for one hour after eight hours of continuous no load operation or as recommended by the engine manufacturer.

(e) Containment Sump Model Test (Appendix C, A-43, Supplement 4)

PSE&G shall submit the confirmatory results of the containment sump model test program, along with a description of any sump modifications resulting from the tests.

(f) Under-Voltage Protection (Section 8.4.1, Supplement 4)

PSE&G shall install a second level of undervoltage protection for the emergency buses.

(g) Reactor Containment Electrical Penetrations (Section 8.4.3., Supplement 4)

PSE&G shall add a fuse in series with the primary device of each one of 12 circuits fed from 230 volt ac motor control centers to provide backup protection for reactor containment electrical penetrations. Each fuse shall be located in an independent compartment in the control center of the present primary device.

(16) Loss of Non-Class 1E Instrumentation and Control Power Bus During Operation (Section 7.9, Supplement 5)

PSE&G shall implement the design modifications identified in the PSE&G letter dated July 31, 1980 prior to resuming power operation following the first refueling outage.

(17) Turbine Inspection (Section 3.5.1, Supplement 5)

Prior to resuming power operation following the second refueling outage, PSE&G shall subject the low pressure turbines to an inservice inspection. The inspection shall consist of visual and volumetric examinations. The visual examination shall be applied to 100 percent of all the accessible surface of the rotors, discs and blading. The volumetric examination shall use an ultrasonic technique to fully examine the bore and keyway region of the discs in each low pressure turbine.

The inspection results and evaluation of this inservice inspection shall be reported to the NRC and shall be accepted by the NRC prior to startup following the second refueling outage.

(18) Vibration Dynamics Effects Test (Section 3.9.1, SER)

PSE&G shall conduct a preoperational vibration dynamic effects test program for all ASME 1, 2 and 3 piping systems and piping restraints during startup test programs and initial operation.

(19) Differential Pressure Baseline Data (Part II, Section I.G, Supplement 4)

PSE&G shall obtain baseline data regarding differential pressure across the elbow pressure taps in each reactor coolant loop for various pump combinations during startup and initial operation.

(20) Engineered Safety Feature Reset Controls (Section 7.10, Supplement 5)

In conformance with IE Bulletin 80-06, PSE&G shall correct the reset actions for the two sets of valves identified in the PSE&G letter dated June 13, 1980, as corrected by the PSE&G letter dated July 18, 1980, prior to operating the facility at a power level above five percent. PSE&G shall also perform the additional testing required by IE Bulletin 80-06 prior to operation above five percent power.

(21) Sump Performance (Section 6.3.3, Supplement 5)

- (a) Prior to resuming power operation following the first refueling outage, PSE&G shall provide a detailed survey of insulation materials.
- (b) Prior to operation above five percent power, control room operators shall be trained in the recognition and mitigation of LPI performance degradation.

(22) Radiation Protection Organization (Section 12.0, Supplement 5)

PSE&G shall complete the reorganization actions and programs associated with radiation protection no later than November 1, 1981.

(23) Category I Masonry Walls (Section 3.8.3, Supplement 5)

- (a) Prior to operation above five percent power, PSE&G shall submit the information requested in the NRC letter dated January 8, 1981.
- (b) Prior to startup following the first refueling, PSE&G shall resolve the difference between the staff criteria and the criteria used by PSE&G to the satisfaction of the NRC and implement the required fixes that might result from such a resolution.

(24) TMI Action Plan Conditions (Section 22.2, Supplement 5)

Unless otherwise noted, each of the following conditions references the appropriate section of Supplement No. 5 to the Safety Evaluation Report (NUREG-0517) for the Salem Nuclear Generation Station, Unit 2, dated January 1981 and shall be completed to the satisfaction of the NRC by the times indicated.

(a) Shift Manning (Section 22.2, I.A.1.3)

PSE&G shall establish regularly scheduled eight-hour shifts without reliance on routine use of overtime by June 3, 1981.

(b) Short-Term Accident Analysis and Procedure Revision (Section 22.2, I.C.1 and I.C.8)

The operators shall be briefed on the revisions to the emergency operation instruction within 30 effective full power days of operation.

(c) Auxiliary Feedwater System Reliability Evaluation
(Section 22.2, II.E.1.1)

- (i) PSE&G shall install auxiliary feedwater storage tank level indications and alarms in accordance with the PSE&G letter of May 5, 1980 prior to startup after the first refueling.
- (ii) PSE&G shall perform a 48-hour endurance test on all auxiliary feedwater system pumps prior to operation at 100 percent power. PSE&G shall provide a report on the results of these tests to NRC within 60 days of completion of the tests.
- (iii) PSE&G shall resolve to NRC's satisfaction the issue concerning time available for operator action to prevent pump damage prior to operation above five percent power.

(d) Upgrade Emergency Preparedness (Section 22.2, III.A.1.1
and Section 22.3, III.A.2)

- (i) No later than 90 days from the date of issuance of this license, PSE&G shall report to the NRC the status of any items related to emergency preparedness identified by FEMA or the NRC as requiring further action.
- (ii) PSE&G shall provide meteorological and dose assessment remote interrogation capability to meet the criteria of Appendix 2, NUREG-0654, Revision 1 as follows:
 - (a) a functional description of upgraded capabilities by January 1, 1982, (b) installation of hardware and software by July 1, 1982 provided that NRC approval is received by four months prior to that time and
 - (c) full operational capability by October 1, 1982.

- (iii) PSE&G shall provide substantiation that the back-up source of meteorological information from the NWS Office, Greater Wilmington Airport adequately characterizes the site conditions with respect to wind direction and wind speed by July 1, 1981.
 - (iv) PSE&G shall provide substantiation that uncertainties associated with plume trajectory prediction, associated with the occurrence of sea-land breeze circulations within the plume exposure pathway zone, are compatible with the planned recommendations for protective actions that would be based upon such projections by July 1, 1981.
- (e) Primary Coolant Sources Outside Containment (Section 22.2, III.D.1.1)
- (i) For those systems in which leakage is measured during shutdown, PSE&G shall make and report leak rate measurements prior to initial startup.
 - (ii) For those systems in which leakage is measured during operations, PSE&G will make and report leak rate measurements within 60 effective full-power days of plant operation.
- (25) TMI Action Plan Dated Conditions (Section 22.3, Supplement 5)

Each of the following conditions references the appropriate section of Supplement No. 5 to the Safety Evaluation Report (NUREG-0517) for the Salem Nuclear Generating Station, dated January 1981, and shall be completed to the satisfaction of the NRC by the times indicated.

- (a) Short-Term Accident Analysis and Procedure Revision (Section 22.3, I.C.1)

PSE&G shall implement the requirements of Item I.C.1 specified in NUREG-0737, "Clarification of TMI Action Plan Requirements," no later than the implementation dates established in NUREG-0737.

(b) Reactor Coolant System Vents (Section 22.3, II.B.1)

PSE&G shall submit procedural guidelines for and a description of the reactor coolant system vents by July 1, 1981. The reactor coolant system vents shall be installed no later than July 1, 1982.

(c) Plant Shielding (Section 22.3, II.B.2)

PSE&G shall complete modifications to assure adequate access to vital areas and protection of safety equipment following an accident resulting in a degraded core not later than January 1, 1982.

(d) Post-Accident Sampling (Section 22.3, II.B.3)

PSE&G shall complete corrective actions needed to provide the capability to promptly obtain and perform radioisotopic and chemical analysis of reactor coolant and containment atmosphere samples under degraded core conditions without excessive exposure no later than January 1, 1982.

(e) Relief, Safety and Block Valve Test Requirements (Section 22.3, II.D.1)

PSE&G shall qualify the reactor coolant system relief, safety and block valves under expected operating conditions for design basis transients and accidents in accordance with the plant-specific requirements and schedules established in NUREG-0737, "Clarification of TMI Action Plan Requirements."

(f) Auxiliary Feedwater Initiation and Indication (Section 22.3, II.E.1.2)

PSE&G shall upgrade, as necessary, automatic initiation of the auxiliary feedwater system and indication of auxiliary feedwater flow to each steam generator to safety grade quality no later than July 1, 1981.

(g) Containment Isolation Dependability (Section 22.3, II.E.4.2)

(i) PSE&G shall reduce the containment setpoint pressure that initiates containment isolation for nonessential penetrations to the minimum compatible with normal operating conditions no later than July 1, 1981.

(ii) PSE&G shall install a high radiation isolation signal on the containment purge and vent isolation valves no later than July 1, 1981.

(h) Additional Accident Monitoring Instrumentation (Section 22.3, II.F.1)

PSE&G shall install and demonstrate the operability of instruments for continuous indication in the control room of the following variables. Each item shall be completed by the specified date in the condition:

(i) Containment pressure from minus five psig to three times the design pressure of the containment no later than January 1, 1982;

(ii) Containment water level from (i) the bottom to the top of the containment sump, and (ii) the bottom of the containment to an elevation equivalent to a 600,000 gallon capacity no later than July 1, 1981;

(iii) Containment atmosphere hydrogen concentration from 0 to 10 volume percent no later than January 1, 1982;

(iv) Containment gamma radiation up to 10^7 rad/hr. no later than January 1, 1982; and

(v) Noble gas effluent from each potential release point from normal concentrations to 10^5 uCi/cc (Xe-133) no later than January 1, 1982.

PSE&G shall provide the capability to continuously sample gaseous effluents and analyze these samples no later than January 1, 1982.

Until the above installation is completed, PSE&G shall use interim monitoring procedures and equipment.

(i) Inadequate Core Cooling Instruments (Section 22.3, II.F.2)

PSE&G shall install and demonstrate the operability of additional instruments or controls needed to supplement installed equipment in order to provide unambiguous, easy-to-interpret indication of inadequate core cooling no later than January 1, 1982.

(j) Thermal Mechanical Report (Section 22.3, II.K.2.13)

PSE&G shall submit a detailed analysis of the thermal-mechanical conditions in the reactor vessel during recovery from small breaks with an extended loss of all feedwater no later than January 1, 1982.

(k) Analysis of Voiding Potential (Section 22.3, II.K.2.17)

PSE&G shall analyze the potential for voiding in the reactor coolant system (RCS) during anticipated transients. PSE&G shall submit this analysis no later than January 1, 1982.

(l) Sequential Auxiliary Feedwater Flow Analysis (Section 22.3, II.K.2.19)

PSE&G shall provide a benchmark analysis of sequential auxiliary feedwater (AFW) flow to the steam generators following a loss of main feedwater no later than January 1, 1982.

(m) Effect of Loss of Alternating-Current Power on Pump Seals (Section 22.3, II.K.3.25)

PSE&G shall determine, by analysis or experiment, the consequences of a loss of cooling water to the reactor coolant pump seals. PSE&G shall submit the results of the evaluation and proposed modifications no later than January 1, 1982.

(n) Revised Small-Break Loss-of-Coolant-Accident Methods
(Section 22.3, II.K.3.30)

PSE&G shall comply with the requirements of this position as specified in NUREG-0737, "Clarification of TMI Action Plan Requirements."

(o) Compliance With 10 CFR Part 50.46 (Section 22.3,
II.K.3.31)

PSE&G shall perform plant-specific calculations using NRC-approved models for small-break loss-of-coolant accidents (LOCAs) to show compliance with 10 CFR Part 50.46. PSE&G shall submit these calculations by January 1, 1983, or one year after NRC approval of LOCA analysis models, whichever is later, only if model changes have been made.

(p) Emergency Support Facilities (Section 22.3, III.A.1.2)

PSE&G shall maintain in effect an interim Technical Support Center and an interim Emergency Operations Facility until such time as the final facilities are complete.

- D. An exemption from certain requirements of Appendix J to 10 CFR Part 50 is described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 4. This exemption was authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. The exemption, therefore, remains in effect. The granting of the exemption was authorized with the issuance of the License for Fuel-Loading and Low-Power Testing, dated April 18, 1980. The facility will operate, to the extent authorized herein, in conformity with the application as amended, the provisions of the Act, and the regulations of the Commission.

- E. PSE&G shall maintain in effect and implement all provisions of the NRC approved physical security plan entitled "Salem Generating Station, Security Plan, Revision 4, Amendment 2", dated August 3, 1978, submitted pursuant to 10 CFR 73.40 including amendments and changes made under the authority of 10 CFR 50.54(p).

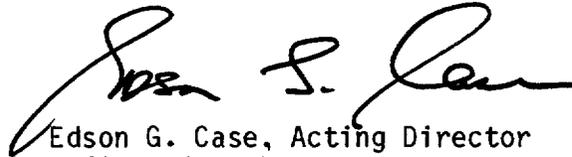
Pursuant to 10 CFR Section 2.790(d), this plan is being withheld from public disclosure because it is deemed to be commercial or financial information within the meaning of 10 CFR Section 9.5(a)(4) and subject to disclosure only in accordance with 10 CFR Section 9.12.

- F. A temporary exemption from General Design Criterion 57 found in Appendix A to 10 CFR Part 50 is described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 5, Section 6.2.3.1. This exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. The exemption, therefore, is hereby granted and shall remain in effect through the first refueling outage as discussed in Section 6.2.3.1 of Supplement 5 to the Safety Evaluation Report. The granting of the exemption is authorized with the issuance of the Facility Operating License, dated May 20, 1981. The facility will operate, to the extent authorized herein, in conformity with the application as amended, the provisions of the Act, and the regulations of the Commission.
- G. This license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, PSE&G shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated in the Final Environmental Statement or any addendum thereto, PSE&G shall provide a written evaluation of such activities and obtain prior approval from the Director of Nuclear Reactor Regulation.

- H. If PSE&G plans to remove or to make significant changes in the normal operation of equipment that controls the amount of radioactivity in effluents from the Salem Nuclear Generating Station, the NRC shall be notified in writing regardless of whether the change affects the amount of radioactivity in effluents.
- I. PSE&G shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(25), E., F., and G of this license within 24 hours by telephone and confirmed by telegram, mailgram, or facsimile transmission to the Director of the Regional Office, or his designee, no later than the first working day following the violation, with a written followup report within 14 days.
- J. The licensees shall immediately notify the Commission of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.
- K. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- L. This license is effective as of the date of issuance and shall expire at midnight September 25, 2008.

FOR THE NUCLEAR REGULATORY COMMISSION



Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation

Attachment:
Appendices A & B

Date of Issuance: May 20, 1981

UNITED STATES NUCLEAR REGULATORY COMMISSION
DOCKET NO. 50-311
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. DPR-75, issued to the Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and the Atlantic City Electric Company, which authorizes operation of the Salem Nuclear Generating Station, Unit 2 at reactor core power levels not in excess of 3411 megawatts thermal (100% power) in accordance with the provisions of the license and the Technical Specifications.

The Salem Nuclear Generating Station, Unit 2 is a pressurized water nuclear reactor located at the licensees' site in Salem County, New Jersey. The license is effective as of its date of issuance.

The application for the license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which are set forth in the license. Prior public notice of the overall action involving the proposed issuance of an operating license was issued in the Federal Register on October 20, 1972 (37 F. R. 22637).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement since the activity authorized by this license is encompassed by the overall action evaluated in the Final Environmental Statement.

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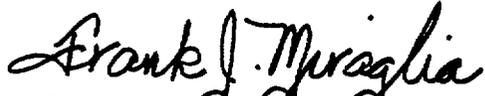
For further details with respect to this action, see (1) Facility Operating License No. DPR-75, complete with Technical Specifications; (2) License for Fuel Load and Low Power Testing dated April 18, 1980 and amendments thereto; (3) the reports of the Advisory Committee on Reactor Safeguards dated February 15, February 22 and August 14, 1979; (4) the Commission's Safety Evaluation Report (NUREG-0517) dated October 1974, Supplement 1 dated June 1976, Supplement 2 dated August 1976, Supplement 3 dated December 1978, Supplement 4 dated April 1980, Supplement 5 dated January 1981, and Supplement 6 dated May 1981; and (5) the Final Safety Analysis Report, docketed August 1971 and amendments thereto; (6) the Environmental Report prepared by Public Service Electric & Gas Company dated June 30, 1970, as supplemented and amended; (7) the Commission's Final Environmental Statement dated April 1973, (8) the NRC Flood Plain Review of the Salem Nuclear Generating Station Site dated April 18, 1980; and (9) the Discussion of the Environmental Effects of the Uranium Fuel Cycle dated May 20, 1981.

These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the local public document room in the Salem Free Public Library, 112 West Broadway, Salem, New Jersey. A copy of item (1) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing, Office of Nuclear Reactor Regulation. Copies of Supplements 3, 4, 5 and 6 of NUREG-0517 may be purchased at current rates from the National Technical Information Service, Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, and through the NRC GPO sales

program by writing to the U. S. Nuclear Regulatory Commission, Attention:
Sales Manager, Washington, D. C. 20555. GPO deposit account holders can
call 301-492-9530.

Dated at Bethesda, Maryland this 20th day of May, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION



Frank J. Miraglia, Acting Chief
Licensing Branch No. 3
Division of Licensing

DISCUSSION OF ENVIRONMENTAL EFFECTS
OF THE URANIUM FUEL CYCLE ACTIVITIES
ATTRIBUTABLE TO OPERATION OF THE
SALEM NUCLEAR GENERATING STATION, UNIT NO. 2
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY
DOCKET NO. 50-311

PREPARED BY THE OFFICE OF NUCLEAR REACTOR REGULATION
U. S. NUCLEAR REGULATORY COMMISSION

The proposed action is the issuance of Facility Operating License No. DPR-75 to the Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company, and Atlantic City Electric Company authorizing operation of the Salem Nuclear Generating Station, Unit 2 at reactor core power levels not in excess of 3411 megawatts thermal (100% power) in accordance with the provisions of the license and the Technical Specifications. The purpose of this Discussion of Environmental Effects is to consider the contribution of the uranium fuel cycle activities to the environmental costs of operating this nuclear power facility. Table S-3, Table of Uranium Fuel Cycle Environmental Data, 10 CFR Part 51, of the Commission's Regulations provides the basis for considering the significance of the uranium fuel cycle impacts resulting from operation of the facility.

In November 1972, a document entitled "Environmental Survey of the Nuclear Fuel Cycle" (hereinafter referred to as "Survey") was published by the Atomic Energy Commission (AEC), predecessor agency of the Nuclear Regulatory Commission. Comments on the Survey were solicited, and an informal rulemaking hearing was held on February 1 and 2, 1973. Written comments were received in response to the Federal Register notice, and recommendations for improvement were offered during the hearings.

The environmental impact of the nuclear fuel cycle was not addressed in the cost-benefit analysis presented in the Final Environmental Statement (FES) Related to the Operation of Salem Nuclear Generating Station, Units 1 and 2, issued April 1973. The FES did note in the discussion of comments received on the Draft Environmental Statement that this matter "is being considered on a generic basis and will be subject to a rule-making proceeding, notice of which was published in the Federal Register on January 3, 1973 (38 FR 49)."

After consideration of the written comments and the hearing record, the AEC promulgated the final fuel cycle rule (the so-called Table S-3) on April 22, 1974 (39 FR 14188). It was intended that, with the inclusion of environmental impacts from Table S-3, the environmental impact statements for individual light water reactors would set forth a full and candid assessment of costs and benefits consistent with the legal requirements and spirit of the National Environmental Policy Act (NEPA).

On January 19, 1975, the AEC was abolished and its licensing and regulatory responsibilities transferred to the Nuclear Regulatory Commission (NRC or Commission).

On July 21, 1976, the United States Court of Appeals for the District of Columbia Circuit decided Natural Resources Defense Council v. NRC, a case involving judicial review of the fuel-cycle rule, and Aeschliman v. NRC, a related case involving the exclusion of fuel cycle issues from an individual power reactor licensing proceeding. The court approved the overall approach and methodology of the fuel cycle rule and found that, regarding most phases of the fuel cycle, the underlying Environmental Survey represented an adequate job of describing the impacts involved. However, the court found that the rule was inadequately supported by the record insofar as it treated two particular aspects of the fuel cycle - the impacts from reprocessing of spent fuel and the impacts from radioactive waste management.

In response to that court decision, the Commission issued a General Statement of Policy (41 FR 34707, August 16, 1976) announcing its intention to reopen the rulemaking proceeding on the environmental effects of the fuel cycle to supplement the existing record on waste management and reprocessing impacts to determine whether the rule should be amended and, if so, in what respect. The Commission thus indicated its intent to handle the question of the environ-

mental impacts of waste management and reprocessing generically rather than in individual licensing proceedings. The Commission directed the NRC staff to prepare on an expedited basis a well-documented supplement (NUREG-0116) to the Survey (WASH-1248) to establish a basis for identifying environmental impacts associated with fuel reprocessing and waste management activities that are attributable to the licensing of a model light-water reactor.

The revised survey was completed in October 1976, and the Commission issued the October 18, 1976 notice regarding the proposed interim rule. The comments received in response to that notice and the Commission's responses to those comments comprise NUREG-0216, Supplement 2 to WASH-1248.

On March 14, 1977, the Commission published in the Federal Register (42 FR 13803) an interim rule regarding the environmental considerations of the uranium fuel cycle. It was to be effective for 18 months (it was extended several times, the final extension being to September 4, 1979) and revised Table S-3 of 10 CFR Part 51. A rulemaking hearing was held to consider whether the interim rule should be made permanent or, if it should be altered, in what respects (42 FR 26978); this proceeding began on May 26, 1977.

The Hearing Board took extensive written and oral testimony from more than twenty participants. On August 31, 1978, the Hearing Board submitted to the Commission a detailed summary of the evidentiary record, followed on October 26, 1978, by its Conclusions and Recommendations.

After studying the Hearing Board's Conclusions and Recommendations and receiving written and oral presentations by rulemaking participants, the Commission adopted as a final rule the modified Table S-3 recommended by the Hearing Board (44 FR 45362 dated August 2, 1979). The modified Table S-3 became effective September 4, 1979. The impact values in this table differ only slightly from the values in the interim rule. With two exceptions, these values will be taken as the basis for evaluating in individual light water power reactor licensing proceedings, pursuant to requirements of the NEPA, the contribution of uranium fuel cycle activities to the environmental costs of licensing the reactor in question. The exceptions are radon releases, presently omitted from the interim rule (43 FR 15613, April 14, 1978),^{1/} and technetium-99 releases from reprocessing and waste management activities.^{2/}

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With regard to radon releases, the matter of appropriate values is under consideration before the Atomic Safety and Licensing Appeal Board in the proceeding derived from ALAB-480 which involved a consolidation of numerous proceedings. The staff's testimony in this proceeding presents the staff's assessment that impacts from radon releases are not significant.

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With regard to technetium-99 releases from reprocessing and waste management activities, in 44 FR 45362 the Commission found:

"In view of the Hearing Board's conclusion that the conservative assumption of complete release of iodine-129 tends to compensate for the omission of technetium from Table S-3, the Commission finds it unnecessary to reopen closed proceedings or to disturb consideration of environmental issues in presently pending proceedings to provide for consideration of technetium-99 releases."

Thus, consideration of technetium-99 releases in connection with the licensing of the Salem Nuclear Generating Station Unit 2 is unnecessary.

The rulemaking record makes clear that effluent release values, standing alone, do not meaningfully convey the environmental significance of uranium fuel cycle activities. The focus of interest and the ultimate measure of impact for radioactive releases are the resulting radiological dose commitments and associated health effects. To convey in understandable terms the significance of releases in the Table, the Hearing Board recommended that the modified Table be accompanied by an explanatory narrative promulgated as part of the rule. The recommended narrative would also address important fuel cycle impacts now outside the scope of Table S-3, including socioeconomic and cumulative impacts, where these are appropriate for generic treatment. Pending further treatment by rulemaking, the Commission directed the NRC staff to address the environmental dose commitments and health effects from fuel cycle releases, fuel cycle socioeconomic impacts, and possible cumulative impacts in the environmental analysis accompanying a proposal to issue a limited work authorization, construction permit, or operating license for a power reactor. The Commission directed the NRC staff to prepare such a narrative. The staff prepared narrative was published on March 4, 1981 in the Federal Register (46 FR 15154-15175).

The narrative is of an explanatory nature, providing a discussion of the environmental dose commitments and health effects, socioeconomic impacts, and possible cumulative impacts associated with the uranium fuel cycle activities representative of a fuel cycle for the Salem Nuclear Generating Station, Unit 2.

The fuel cycle effects presented in Table S-3, as discussed in the explanatory narrative are sufficiently small so that, when they are superimposed upon the other environmental impacts assessed with respect to operation of the reactor, the changes in the overall environmental impact from operation of the Salem Nuclear Generating Station, Unit 2 are not substantial. Giving due consideration to the values given in Table S-3 and the information set forth in the explanatory narrative, the NRC staff concludes that the overall cost-benefit balance previously developed in the Salem Final Environmental Statement remains unaltered.