

April 27, 1989

Docket No. 50-333

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Mr. John C. Brons
Executive Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Brons:

SUBJECT: NOTICE OF ISSUANCE OF ENVIRONMENTAL ASSESSMENT (TAC 66123)

Enclosed for your information is a copy of a "Notice of Issuance of Environmental Assessment and Finding of No Significant Impact" related to your August 19, 1987, request for an amendment to Facility Operating License DPR-59, for the James A. FitzPatrick Nuclear Power Plant. The proposed amendment would extend the expiration date of the license from May 20, 2010 to October 17, 2014. These dates represent 40 years from the dates of the Construction Permit and the Operating License, respectively. Also enclosed is a copy of the Environment Assessment related to this extension.

The notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by

David E. LaBarge, Project Manager
Project Directorate I-1
Division of Reactor Projects, I/II

Enclosures:

- 1. FR Notice
- 2. Environmental Assessment

cc: w/enclosures
See next page

[EXTENSION OF LICENSE)

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UNITED STATES NUCLEAR REGULATORY COMMISSION
POWER AUTHORITY OF THE STATE OF NEW YORK
DOCKET NO. 50-333
NOTICE OF ISSUANCE ENVIRONMENTAL ASSESSMENT
AND FINDING OF NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-59, issued to the Power Authority of the State of New York (PASNY or the licensee) for operation of the FitzPatrick Nuclear Power Plant, located in Oswego County, New York.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

The proposed amendment would consist of a change to the operating license to extend the expiration date of the operating license from May 20, 2010 to October 17, 2014 for the FitzPatrick Nuclear Power Plant, and is in response to the licensee's application dated August 19, 1987. These dates represent 40 years from the dates of the Construction Permit and the Operating License, respectively. The Commission's staff has prepared an Environment Assessment of the proposed action, "Environmental Assessment by the Office of Nuclear Reactor Regulation Relating to the Change in the Expiration Date of Facility Operating License DPR-59, Power Authority of the State of New York, Oswego County, New York, FitzPatrick Nuclear Power Plant, Docket Number 50-333, dated April 27, 1989 ."

Summary of Environmental Assessment:

The Commission's staff has reviewed the potential environmental impact of the proposed change in the expiration date of the Operating License for the FitzPatrick Nuclear Power Plant. This evaluation considered the previous environmental studies, including the "Final Environmental Statement for the FitzPatrick Nuclear Plant" dated March 1973, and more recent NRC policy related to evaluations of license extensions for similar nuclear power plants.

Radiological Impacts:

The staff concludes that the Exclusion Area, the Low Population Zone and the nearest population center distances will likely be unchanged from those described in the March 1973 Final Environmental Statement (FES). The population living within 10 miles of the plant in 1988 is only slightly higher than the number of people which the 1970 census estimated would be living within the 10-mile zone. This slow, small increase in the number of people living within the 10-mile zone and the continuing rural nature of the area indicate that the number of people living around the plant should pose no problem to the proposed extension of the operating license.

The additional period of plant operation would not significantly affect the probability or consequences of any reactor accident. Station radiological effluents to unrestricted areas during normal operation have been well within Commission regulations regarding as-low-as-reasonably-achievable (ALARA) limits, and are indicative of future releases. The proposed additional years of reactor operation do not increase the annual public risk from reactor operation.

With regard to normal plant operation, the occupational exposures for the FitzPatrick Nuclear Power Plant personnel have been only slightly above the national average for boiling water reactors. The licensee is striving for significant dose reductions in accordance with ALARA principles and the staff expects that further reductions will be achieved using advanced technologies and equipment that are and will likely become available.

Accordingly, annual radiological impacts on man, both offsite and onsite, are not more severe than previously estimated in the FES, and our previous cost-benefit conclusions remain valid.

The environmental impacts attributable to transportation of fuel and waste to and from the FitzPatrick Nuclear Plant, with respect to normal conditions of transport and possible accidents in transport, would be bounded as set forth in Summary Table S-4 of 10 CFR Part 51.52. The values in Table S-4 would continue to represent the contribution of transportation to the environmental costs associated with plant operation.

Non-Radiological Impacts:

The Commission has concluded that the proposed extension will not cause a significant increase in the impacts to the environment and will not change any conclusions reached by the Commission in the FES.

FINDING OF NO SIGNIFICANT IMPACT:

The Commission has reviewed the proposed change to the expiration date of the James A. FitzPatrick Nuclear Plant facility operating license relative to the requirements set forth in 10 CFR Part 51. Based upon the environmental assessment, the staff has concluded that there are no significant radiological

or non-radiological impacts associated with the proposed action and that the proposed license amendment will not have a significant effect on the quality of the human environment. Therefore, the Commission has determined, pursuant to 10 CFR 51.31, not to prepare an environmental impact statement for the proposed amendment.

For further details with respect to this action, see (1) the application for amendment dated August 19, 1987, (2) the Final Environmental Statement for the James A. FitzPatrick Nuclear Plant, issued March 1973, and (3) the Environmental Assessment dated April 27, 1989 . These documents are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C., and at the State University of New York, Penfield Library, Reference and Documents Department, Oswego, New York 13126.

Dated at Rockville, Maryland, this 27th day of April 1989.

FOR THE NUCLEAR REGULATORY COMMISSION
Original signed by

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects I/II

[EXTENSION OF LICENSE)

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ENVIRONMENTAL ASSESSMENT
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATING TO THE CHANGE IN THE EXPIRATION DATE OF
FACILITY OPERATING LICENSE DPR-59
POWER AUTHORITY OF THE
STATE OF NEW YORK
OSWEGO COUNTY, NEW YORK
FITZPATRICK NUCLEAR POWER PLANT
DOCKET NUMBER 50-333
DATED: _____

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1.0 INTRODUCTION

The United States Nuclear Regulatory Commission (the staff) is considering the issuance of a proposed amendment which would extend the expiration date of the facility operating license for the James A. FitzPatrick Nuclear Power Plant. The expiration date for license DPR-59 would be extended from May 20, 2010 to October 17, 2014. The FitzPatrick Plant is operated by the Power Authority of the State of New York (PASNY or the licensee) and is located in the County of Oswego, New York.

2.0 IDENTIFICATION OF THE PROPOSED ACTION

The currently licensed term is 40 years commencing with the issuance of the construction permit on May 20, 1970. Accounting for the time that was required for construction of the plant, this represents an effective operating license term of approximately 35.5 years. The licensee's application of August 19, 1987 requests extension of the expiration date of the operating license to October 17, 2014. With this proposed expiration date, the 40-year operating term for the license would start with issuance of the operating license rather than issuance of the construction permit.

3.0 THE NEED FOR THE PROPOSED ACTION

The granting of the proposed license amendment would allow the licensee to operate for approximately four and one-half additional years beyond the currently approved license expiration date. Without issuance of the proposed license amendment, the plant would be shut down at the end of the currently approved license term.

4.0 ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

In March 1973, the United States Atomic Energy Commission issued the "Final Environmental Statement for the James A. FitzPatrick Nuclear Plant." This document was issued in support of continuation of the Construction Permit CPPR-71 and the issuance of an operating license to the Power Authority of the State of New York and the Niagara Mohawk Power Corporation. This document provides an evaluation of the environmental impact associated with plant operation. The staff has reviewed the Final Environmental Statement (FES), and additional information provided by the licensee in its license amendment submittal, to determine the environmental impact of operation of the FitzPatrick Plant for approximately four and one-half additional years.

4.1 Radiological Impacts

The staff has considered potential radiological impacts for the general public in residence in the vicinity of the James A. FitzPatrick Nuclear Power Plant. These impacts include potential accidents and normal radiological release. In addition, the staff has considered the impacts of radiation exposure to workers at the plant. Finally, the impact on the transportation of fuel and waste have been considered. These impacts are summarized in Sections 4.1.1 through 4.1.3 below.

4.1.1 General Public

In the FES the staff calculated the dose commitment to the population residing around the FitzPatrick site to assess the impacts on people from radioactive material released as part of the normal operation of the plant. Table 5.9 of the FES lists the estimated annual doses associated with the operation of the FitzPatrick Plant, and shows that the dose would be below the annual dose design objectives of 10 CFR 50, Appendix I, Rule Making 50-2. Since this dose is not expected to increase, but could, in fact, decrease, the staff concludes that the dose to members of the public would remain below the dose design objectives of 10 CFR 50, Appendix I, and would not be significant.

The staff has assessed the public risks from reactor accidents per year of operation at other reactors of comparable design and power level. In all cases, the estimated risks of early fatalities and latent cancer fatalities per year of reactor operation have been small compared to the risks of many non-reactor type of accidents to which the public is typically exposed, and the natural incidence of fatal cancers. The annual risks associated with reactor accidents did not increase with longer period of operation of the reactor. If similar risks were estimated for the FitzPatrick Plant, a similar conclusion would be expected. Further, the integrated exposure to population within a 50-mile radius of the site from each postulated accident would be orders of magnitude smaller than that from naturally occurring background radiation. When considered with the probability of occurrence, the annual potential radiation exposure of the population from all the postulated accidents is an even smaller fraction of the exposure from natural background radiation and, in fact, is well within naturally occurring variations in the natural background. The staff concludes that the proposed additional years of operation would not increase the annual public risk from reactor accidents.

A comparison of the projected Oswego County population figures in Table 5.7 of the FES for 1980 (which was based on the 1970 census), versus the actual 1980 U.S. Census figures, shows an overprediction of 7% for Oswego County (which contains the entire 10 mile Emergency Planning Zone) and an overprediction of 9.5% for the seven surrounding counties (which represents the 50 mile radius around the plant). Additionally, comparison of the Final Safety Analysis Report (FSAR) and 1980 census figures shows an overprediction of 4% for Oswego County and 10.8% for the seven county region. The 1980 census figure shows that the Oswego County population was 114,000 and the seven county population was 1,089,000. Thus, the area continues to be sparsely settled and predominantly natural open space, as predicted in the FES.

Therefore, the staff has concluded that the effect on the general public of continued plant operation through the year 2014 would not increase over that previously evaluated as a result of the license extension.

4.1.2 Occupational Exposures

The staff has evaluated the licensee's dose assessment for the years 2010 to 2014 - the additional years during which FitzPatrick would operate - and compared it with current FitzPatrick and overall industry dose experience. The average dose for the FitzPatrick plant over the most recent five-year

period covering 1984 through 1988 has been 832 person-rem per year, which is only slightly higher than the industry average of approximately 800 person-rem dose per unit per year for operating boiling water reactors in the United States. This period included two years (1985 and 1987) when outages required unusually high dose commitments for inspections and repair of plant systems. The licensee does not expect any increases in station dose during the years 2010 to 2014 and has, in fact, committed to a goal of less than 300 person-rem, each year starting in 1989. It is expected that this can be accomplished with a strong ALARA program which is being developed and by using state-of-the-art technologies, including zinc injection, enhanced chemistry control and modern decontamination methods. The staff expects that increased doses from maintenance and corrosion product buildup will be offset by a continually improving ALARA program, dose-saving plant modifications, and fewer major modifications. Continuing improvements in fuel integrity and increased effort to prevent leaks from contaminated systems are expected to result in further decreases in personnel contaminations. Overall, occupational radiation exposures can be expected to remain about as estimated in the FES and lower than has been experienced during recent years.

Additional occupational exposures will result from decommissioning of the FitzPatrick plant, although these doses will be incurred with or without the license extension periods. Any increases in corrosion product buildup during the period of extension will be compensated for by improved chemistry controls and other ALARA measures. Consequently, the extended operating time should have no measurable adverse effect on decommission dose requirements.

The combined storage capacity of the spent fuel pool is 2244 bundles. Current projections indicate that the pool will be unable to accommodate a full core off-load by the year 1991 and will not be able to accommodate a refueling off-load (approximately one-third of the core) by the year 1995. Present plans call for submittal of a license amendment in mid-1989 to install new fuel racks which will accommodate an additional 553 fuel bundles. This will extend the full core off-load capability year to 1997 and the refueling off-load year to 2001. During this time other plans can be formulated for additional storage capability either on-site or in conjunction with plans being developed by the State of New York.

The staff concludes that the licensee's dose assessment is acceptable and that the radiation protection program at FitzPatrick is adequate to ensure that occupational radiation exposures will be maintained ALARA and in continued compliance with the requirements of 10 CFR Part 20.

Therefore, the staff concludes that the environmental impact associated with a 40-year operating license duration is not significantly different from that associated with the approximately 35-year operating term authorized by the existing license which was previously assessed in the FitzPatrick FES.

4.1.3 Environmental Impacts-Transportation of Fuel and Waste

The staff has reviewed the environmental impact attributable to the transportation of fuel and waste to and from the FitzPatrick site. With respect to the normal conditions of transport and possible accidents in

transport, the staff concludes that the environmental impacts are bounded by those identified in Table S-4, "Environmental Impact of Transportation of Fuel and Waste To and From One Light Water-Cooled Nuclear Power Reactor" of 10 CFR Part 51.52. The bases for this conclusion are that: (1) Table S-4 is based on an annual refueling and an assumption of 60 spent-fuel shipments per reactor year. At the present time the FitzPatrick reactor has completed a transition to an 18-month refueling cycle which would result in fewer than 60 spent-fuel shipments per year, if fuel shipment were, in fact, being made. Reducing the number of fuel shipments would reduce the overall impacts related to population exposure and accidents discussed in Table S-4. (2) Table S-4 represents the contribution of such transportation to annual radiation dose per reactor year to exposed transportation workers and to the general public. Even if the spent fuel exceeds the average fuel irradiation level specified in 10 CFR 51.52(a)(3) (which is used as the bases for Table S-4) it will still be less than 60 gigawatt days per metric ton (GWD/MTU). The NRC has previously found (53 FR 6040, February 29, 1988) that the environmental impacts summarized in Table S-4 of 10 CFR 51.52 are conservative and bound the corresponding impacts for burnup levels up to 60 GWD/MTU. By comparison, the FitzPatrick design value is approximately 27 GWD/MTU according to the FitzPatrick FSAR. The radiation levels of transport fuel casks are limited by the Department of Transportation and are not dependent on fuel enrichment and/or irradiation levels. Therefore, the estimated doses to exposed individuals per reactor year will not increase over that specified in Table S-4.

The annual radiation dose to individuals would not be changed by the extended period of operation. Although some integral risk with respect to normal conditions of transportation and possible accidents in transport would be attributed to the additional years of operation, the integral risk would not be significant because the annual risk for such transportation is small.

4.2 Non-Radiological Impacts

The staff has reevaluated the non-radiological impact associated with operation of FitzPatrick to include the approximately four and a half additional years of operation associated with changes in the expiration date of the operating license. The non-radiological impact, primarily on water and land use, is shown in the FES to be quite minor. Continued plant operation during the additional four and a half year period would also have a minor impact when compared with the impacts associated with construction or replacement power production capability.

All potential impacts have been identified, described, and evaluated in previously issued environmental impact statements and/or appraisals by the NRC and reviews by the U.S. Environmental Protection Agency under a National Pollutant Discharge Elimination System permit. All operational, non-radiological impacts on biological resources have been assessed by the staff in the FES on bases other than a life-of-plant basis and the requested extension of the operating license will not alter previous staff findings and conclusions.

We conclude, therefore, that the non-radiological impacts associated with the proposed changes in the license expiration date is acceptable.

5.0 ALTERNATIVES TO THE PROPOSED ACTION

The principal alternative to issuance of the proposed license extension would be to deny the application. In this case, FitzPatrick would shut down upon expiration of the present operating license.

In Sections 9 and 11 of the FES, alternative energy sources and sites and a benefit-cost summary is presented. Included in the analysis is comparison among various options for producing an equivalent electrical power capacity. Even considering significant changes in the economics of the alternatives, operation of the FitzPatrick plant in the present configuration for an additional four and a half years would only require incremental yearly costs. These costs would be substantially less than the purchase of replacement power or the installation of new electrical generating capacity. Moreover, the overall cost per year of the facility would decrease since the large initial capital outlay would be averaged over a greater number of years. In summary, the cost-benefit advantage of the FitzPatrick plant compared to alternative electrical power generating capacity improves with the extended plant lifetime.

6.0 ALTERNATIVE USE OF RESOURCES

This action does not involve the use of resources not previously considered in connection the March 1973 FES.

7.0 AGENCIES AND PERSONS CONSULTED

The Commission's staff reviewed the licensee's request and consulted with the State of New York Energy Office, which had no objection to the proposed operating license extension.

8.0 BASIS AND CONCLUSIONS FOR NOT PREPARING AN ENVIRONMENTAL IMPACT STATEMENT

The Commission has determined not to prepare an environmental impact statement for the proposed action. The staff has reviewed the proposed license amendment relative to the requirements set forth in 10 CFR Part 51. Based on this assessment, the staff concludes that there are no significant radiological or non-radiological impacts associated with the proposed action and it will not change any conclusions reached by the Commission in the FES. Therefore, pursuant to 10 CFR 51.31, an environmental impact statement need not be prepared for this action. Based upon this environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment.

Dated:

PRINCIPAL CONTRIBUTORS

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