

February 27, 1985

Docket Nos. 50-317
and 50-318

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MEMORANDUM FOR: William T. Russell, Acting Director, Division of Human Factors Safety
Robert J. Bosnak, Acting Assistant Director for Components and Structures Engineering, DE
William V. Johnston, Assistant Director for Materials, Chemical & Environmental Technology, DE
Robert W. Houston, Assistant Director for Reactor Safety, DSI
Lester R. Rubenstein, Assistant Director for Core and Plant Systems, DSI
Frank Schroeder, Assistant Director for Generic Projects, DST

FROM: Gus C. Lainas, Assistant Director for Operating Reactors
Division of Licensing

SUBJECT: REVIEW OF REQUEST FOR 40 YEAR LICENSE FOR CALVERT CLIFFS UNITS 1 AND 2

By letter dated June 15, 1984, a copy of which is enclosed, Baltimore Gas and Electric Company requested license amendments for Calvert Cliffs Units 1 and 2 to extend the operating licenses (OLs) to allow for a 40-year operating life. The OLs are currently based upon a 40-year period starting from initiation of construction. As with previous requests of this type, most recently Palo Verde, the licensee has indicated that the plant has been designed for a 40-year operational life. The licensee further states that all safety issues have already been addressed or will be considered as part of ongoing programs (such as ISI). Environmental issues have not, as yet, been completely reviewed.

We request that the enclosed application be reviewed to identify potential safety review areas, if any. Review hours should be charged to TAC # 55285 and your reviews should be completed by March 22, 1985.

Gus C. Lainas, Assistant Director
for Operating Reactors
Division of Licensing

Enclosure:
As stated

Contact:
D. H. Jaffe
X28140

*See previous concurrence page

ORB#3:DL*	ORB#3:DL*	ORB#3:DL*	AD:DL*
PMKreutzer	DJaffe:dd	JRMiller	GCLainas
2/11/85	2/11/85	2/11/85	2/25/85

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CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

June 15, 1984

ARTHUR E. LUNDVALL JR.
VICE PRESIDENT
SUPPLY

Director of Nuclear Reactor Regulation
Attention: Mr. J. R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Calvert Cliffs Nuclear Power Plant
Units Nos. 1 & 2; Dockets Nos. 50-317 & 50-318
Request for Operating License Amendment

Gentlemen:

Pursuant to the stipulations of 10 CFR 50 paragraphs 50.51, 50.90, and 50.92, the Baltimore Gas and Electric Company hereby requests an Amendment to its Operating Licenses Nos. DPR-53 and DPR-69 for Calvert Cliffs Units 1 and 2, respectively, to extend the duration of both licenses to 40 years from the date of issuance. Please note that this change is consistent with actions taken by the Commission in 1982 on the LaSalle and Susquehanna operating license applications.

PROPOSED CHANGE (BG&E FCR 84-1048)

Change the expiration date for the Unit 1 Operating License from July 7, 2009, to July 31, 2014, as shown on the proposed page 4 of DPR-53 (attached).

Change the expiration date for the Unit 2 Operating License from July 7, 2009, to August 13, 2016, as shown on the proposed pages 1 & 7 of DPR-69 (attached).

DISCUSSION

The currently licensed term for plant operation is 40 years commencing with issuance of the construction permit (July 7, 1969). Accounting for the time that was required for plant construction, this represents an effective operating license term of only 35 years for Unit 1 and 33 years for Unit 2. This request contemplates a full 40-year operating license term for Calvert Cliffs. We believe that the basis for granting our request is clearly established in the Commission's regulations. 10 CFR 50.51 states that the Commission will issue an operating license for the term (not to exceed 40 years) requested by the applicant

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Acc'd w/ check \$4,400
A118684

or for the estimated useful life of the facility if the Commission determines that the estimated useful life is less than the term requested.

We fully expect that the facility will remain useful beyond the current operating license expiration dates, and will continue to enhance the economic health and well-being of the company's service area. The plant is a major asset to Calvert County and surrounding communities by virtue of its ongoing contributions to the property tax base and secondary benefits to the local economy from employee payroll, and from expenditures for goods and services to operate the plant. As a baseload generating station, Calvert Cliffs provides power and stability to the Pennsylvania-New Jersey-Maryland interconnection. The additional years of plant operation allowed by the proposed change would defer the need to install replacement baseload capacity (thus deferring the environmental impacts associated with construction of such capacity) or to purchase supplemental power from outside our system. Utilization of domestic sources of energy such as nuclear power helps reduce our nation's dependence on expensive imported oil.

Finally, residents and industrial interests throughout the Company's service area will benefit from the lower cost of electricity that would result from spreading the capital costs of the plant over a longer period of time.

DETERMINATION OF SIGNIFICANT HAZARDS CONSIDERATIONS

We have evaluated the potential impacts associated with this request and have determined that, to the best of our knowledge, the proposed change does not involve a significant hazards consideration. This determination is based primarily on the fact that a 40-year service life was considered during the design and construction of the plant. Although this does not mean that some components will not wear out during the plant lifetime, design features were incorporated which maximize the inspectability of structures, systems and equipment. Surveillance and maintenance practices which are implemented in accordance with the ASME code and the facility Technical Specifications provide assurance that any unexpected degradation in plant equipment will be identified and corrected.

The design of the reactor vessel and its internals considered the effects of 40 years of operation at full power with a plant capacity factor of 80% (32 effective full power years). Analyses have demonstrated that expected cumulative neutron fluences will not be a limiting consideration. In addition to these calculations, surveillance capsules placed inside the reactor vessel provide a means of monitoring the cumulative effects of power operation.

Aging analyses have been performed for all safety-related electrical equipment in accordance with 10 CFR 50.49, Environmental Qualification, identifying qualified lifetimes for this equipment. These lifetimes will be incorporated into plant equipment maintenance and replacement practices to ensure that all safety-related electrical equipment remains qualified and available to perform its safety function regardless of the overall age of the plant.

We have reviewed the Calvert Cliffs Environmental Report dated November 16, 1970, and its supplement dated November 8, 1971, and have

concluded that the impacts associated with a 40-year license duration are not significantly different from those associated with the 33-year and 35-year license durations for Unit 1 and Unit 2, respectively. In general, the Environmental Report assesses various impacts associated with operation of the facility in terms of annual impacts and balances these against the anticipated energy production benefits. Thus, the overall assessment and conclusions would not be dependent on specific operating life. There are, however, five areas in which a specific operating life was either assumed or discussed:

1. Future population
2. Power supply needs and economic benefits
3. Cost-benefit analysis for alternative condenser cooling systems
4. Cost-benefit analysis for radioactive waste treatment systems
5. Total population dose estimates from postulated accidents and occurrences.

An estimated total population for the year 2010 (Item 1, above) was used in the overall evaluations and cost-benefit analyses of plant systems (Items 3-5). This estimate was based on a predicted annual growth rate of 1.5% over a period of 45 years. Actual annual growth rates during the period from 1970 to 1981 for the area within a 10-mile radius of the plant have varied anywhere from 3% to 6%. If these growth rates continue throughout plant life (which is unlikely) the population projections for the years 2014 and 2016 will be considerably higher than those previously predicted for the year 2010. However, a higher projected population would not change the conclusions in the Environmental Report with regard to the adequacy of plant systems.

The calculations presented in the Environmental Report supporting the conclusion of the need for power (Item 2, above), would not be affected because the plant is already operational and is expected to remain economically useful for the period of time in question.

SAFETY COMMITTEE REVIEW

This proposed change to the Operating Licenses and our determination of significant hazards have been reviewed by our Plant Operations and Off-Site Safety Review Committees, and they have concluded that implementation of this change will not result in an undue risk to the health and safety of the public.

FEE DETERMINATION

We have determined, pursuant to 10 CFR 170.22, that this amendment request consists of one Class III Amendment and one Class I Amendment in that it involves a single issue; i.e., the starting dates of the 40-year terms of the operating licenses; for which the Commission's position is clearly defined; i.e., that an operating license can be issued for 40 years from the issuance date if requested by the applicant as long as the NRC does not specifically determine

that the plant will be useful for a lesser term. Accordingly, we are including BG&E check number A118684 in the amount of \$4,400 to cover the fee for this request.

Very truly yours,

Arthur E. Lundvall, Jr.

AEL/BSM/vf

Attachments

STATE OF MARYLAND :
CITY OF BALTIMORE :
TO WIT:

Arthur E. Lundvall, Jr., being duly sworn, states that he is Vice President of the Baltimore Gas and Electric Company, a Corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made therein are true and correct to the best of his knowledge, information, and belief; and that he was authorized to execute the same on behalf of said Corporation.

WITNESS My Hand and Notarial Seal:

Minnie L. Robinson
Notary Public

My Commission Expires:

July 1, 1986
Date

- cc: D. A. Brune, Esq.
- G. F. Trowbridge, Esq.
- Mr. D. H. Jaffe, NRC
- Mr. T. Foley, NRC
- Mr. T. Magette, DNR
- Mr. J. C. Ventura, Bechtel
- Mr. R. R. Mills, CE

Unit 1 Operating License
DPR-53

- 4 -

(1) Civil Engineering

- (a) Site investigation and soil studies.
- (b) Shoreline design change studies and preparation of license application for dredging and filling.
- (c) Preliminary layout drawings of circulating water piping.
- (d) Foundation studies.

(2) Electrical Engineering

Preliminary single line drawings and design review of auxiliary electrical capacity.

(3) Mechanical layout and engineering

- (a) Cooling tower sizing and selection.
- (b) Cooling tower specifications.
- (c) Preliminary equipment sizing of pumps, piping and buildings.
- (d) Large pump specifications.
- (e) Additional site meteorological studies pertaining to cooling tower drift.

E. This license is effective as of the date of issuance and shall expire at midnight ~~July 7, 2009.~~

July 31, 2014

FOR THE ATOMIC ENERGY COMMISSION

Original Signed by
Roger S. Boyd

A. Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Attachment:
Appendices A & B -
Technical Specifications

Date of Issuance: JUL 31 1974



Unit 2 Operating License
DPR-69

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

NOV 30 1976

Docket No. 50-318

Baltimore Gas and Electric Company
ATTN: Mr. John W. Gore, Jr.,
Vice President
Gas and Electric Building
Charles Center
Baltimore, Maryland 21203

Gentlemen:

ISSUANCE OF AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. DPR-69
FOR CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 2 to Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit 2. This amendment is in response to your request dated October 25, 1976, and is effective as of the date of issuance. Facility Operating License No. DPR-69, as amended, shall expire at midnight, ~~July 7, 2009.~~

August 13, 2016.

In accordance with the Commission's Supplemental Statement of General Policy of November 5, 1976 (41 F.R. 49898, November 11, 1976), the staff has determined in the enclosed Environmental Assessment, that use of revised values for reprocessing and waste management would not tilt the cost-benefit balance for the Calvert Cliffs Nuclear Power Plant, Unit 2 against issuance of a full power operating license. Accordingly, Amendment No. 2 to Facility Operating License DPR-69 authorizes the Baltimore Gas and Electric Company to operate the Calvert Cliffs Nuclear Power Plant, Unit 2 at a reactor core power level of 2560 megawatts thermal (one hundred percent of the rated core thermal power level).

Other changes include (1) the requirement for a permanent means of providing overpressure protection; (2) the requirement for additional surveillance to provide early detection of reactivity or power distribution anomalies; (3) the condition that Facility Operating License No. DPR-69 is subject to the outcome of the proceedings in Natural Resources Defense Council v. NRC (D. C. Circuit, July 21, 1976) Nos. 74-1385 and 74-1586, and (4) modifications to the Appendix B Technical Specifications to reflect Thermal Effluent Limitations set forth in the NPDES permit issued by the State of Maryland. After considering the potential for environmental impacts of plant operation

Unit 2 Operating License

DPR-69

- 7 -

~~Revision 4 (complete revision) submitted under cover 1. dated May 3, 1974, J. W. Gore, Jr., (BG&E) to L. M. Muntzing (AEC);~~

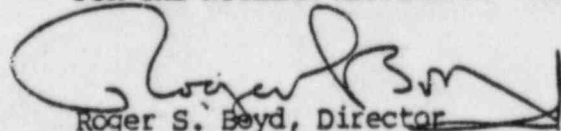
~~Revision 5 submitted under cover letter dated September 5, 1974, J. W. Gore, Jr., (BG&E) to E. Case (AEC);~~

~~Revision 6 submitted under cover letter dated June 5, 1975, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC), and~~

~~Criterion I, II, and III of enclosure (1) of letter dated July 7, 1976, A. E. Lundvall, Jr., (BG&E) to B. C. Rusche (NRC).~~

- E. If harmful effects or evidence of irreversible damage are detected by the biological monitoring program, hydrological monitoring program, and the radiological monitoring program specified in the Appendix B Technical Specifications, the licensee will provide to the staff a detailed analysis of the problem and a program of remedial action to be taken promptly to eliminate or significantly reduce the detrimental effects or damage.
- F. In accordance with the requirement imposed by the October 8, 1976, order of the United States Court of Appeals for the District of Columbia Circuit in Natural Resources Defense Council v. Nuclear Regulatory Commission, Nos. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license amendment issued herein shall be subject to the outcome of such proceedings.
- G. This amended license is effective as of the date of its issuance. Facility Operating License No. DPR-69, as amended, shall expire at midnight, July 7, 2009.

FOR THE NUCLEAR REGULATORY COMMISSION



Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to Technical Specifications,
Appendix B

Date of Issuance: November 30, 1976