



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 124 TO FACILITY OPERATING LICENSE NO. NPF-21
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397

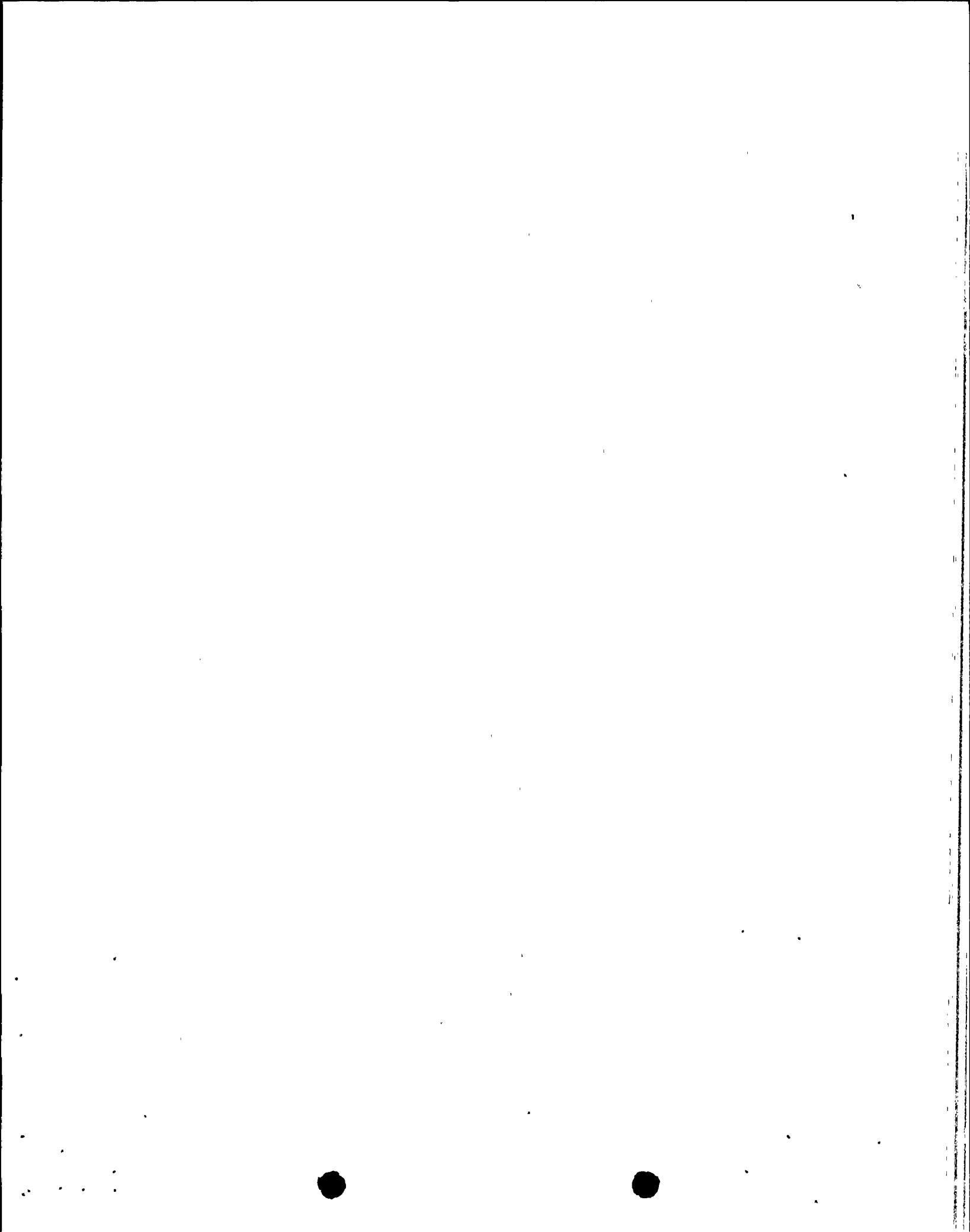
1.0 INTRODUCTION

By letter dated December 20, 1993, supplemented with March 25, 1994, and April 25, 1994, letters, the Washington Public Power Supply System (the licensee) requested an amendment to the WPPSS Nuclear Project No. 2 (WNP-2) Technical Specifications (TS). The proposed amendment would revise limiting conditions for operations (LCOs) and surveillance requirements (SRs) relating to containment vent and purge system isolation valves. The additional information contained in the supplemental letters was clarifying in nature, was within the scope of the initial notice, and did not affect the NRC staff's proposed no significant hazards consideration determination.

2.0 BACKGROUND

The WNP-2 facility TS presently include requirements relating to (a) blocking devices intended to limit the maximum opening angle of containment vent and purge valves, (b) augmented testing requirements for resiliently-seated containment vent and purge valves, and (c) cumulative time limits on containment venting and purging during normal operation.

The WNP-2 containment vent and purge systems contain large butterfly-type isolation valves. These valves are normally closed during power operation. The valves are opened intermittently to adjust containment pressure or inert or de-inert the containment with nitrogen while starting up or shutting down the reactor. Thus, the valves must be capable of quick closure against the high pressure and dynamic forces resulting from a loss of coolant accident (LOCA). SRP Section 6.2.4/BTP CSB 6-4 specifies a maximum closure time of five seconds for such valves. In order to meet these performance requirements, containment vent and purge isolation valves typically have a mechanical stop device that prevents them from being capable of opening more than a predetermined amount, typically 60° to 70° (90° is full open). The available actuator torque is capable of closing the valve within the time limit, against the dynamic forces calculated to result from a LOCA, with the valve position limited to no more than the calculated amount. Utilities typically use add-on auxiliary devices capable of being readjusted or removed by operating personnel to limit containment isolation valve travel. A surveillance requirement is included in the TS to verify that a butterfly valve opening angle does not exceed its limit since add-on devices can be



removed or misadjusted. This surveillance must be performed each time a valve is opened during power operation, unless it has been performed within the previous 31 days.

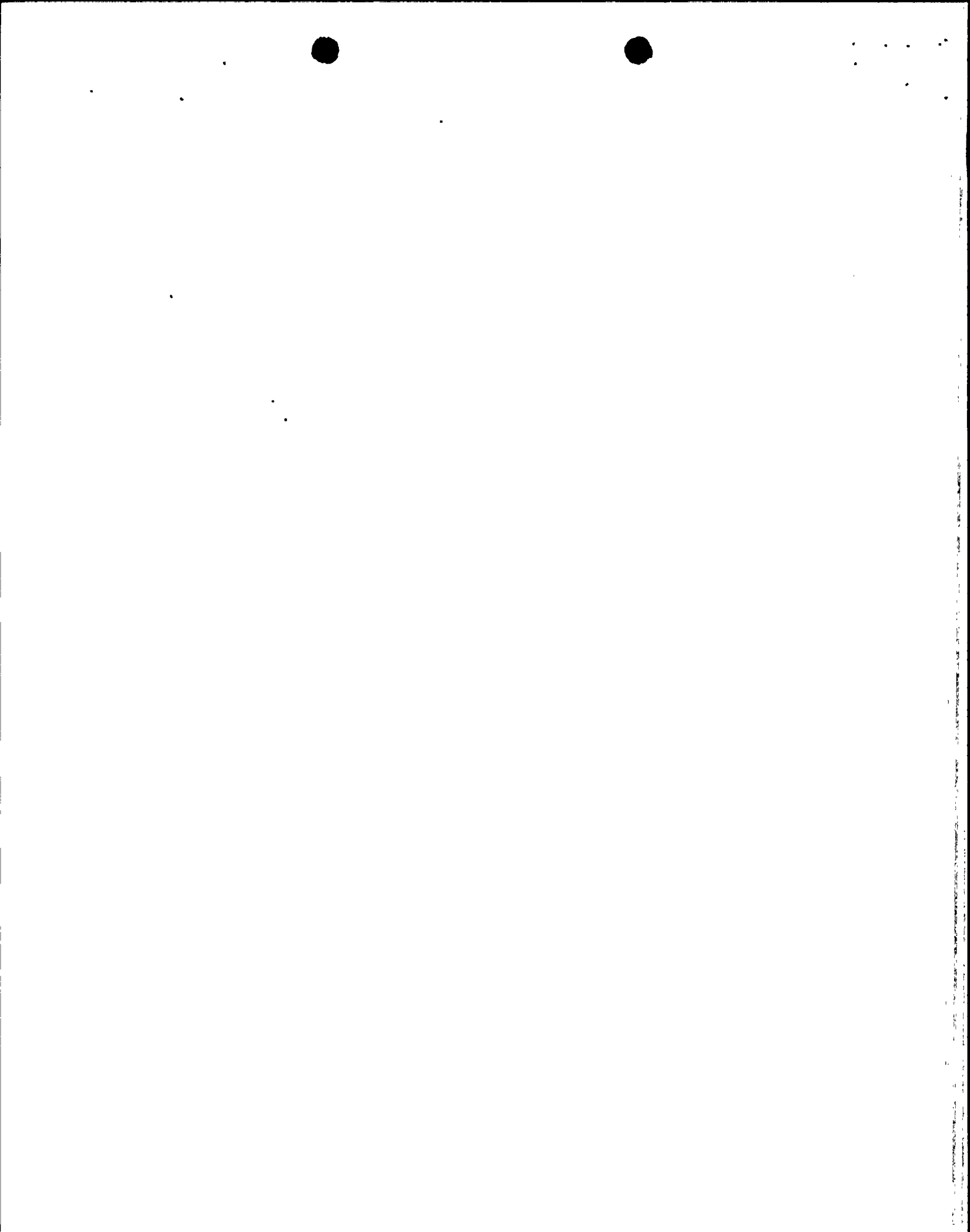
3.0 EVALUATION

Presently installed WNP-2 containment vent and purge butterfly isolation valves are limited to a maximum opening angle of 70°. WNP-2 does not utilize travel-limiting stops that are subject to removal or misadjustment. Instead, the stops are as welded extensions in the actuators. The licensee plans to replace two vent and two purge valves with metal-to-metal seated valves. These valves will be able to close within the required time limit, against LOCA dynamic forces, from the full 90°-open position. Thus, the licensee requested that the TS requirements relating to containment vent and purge valve opening angle limits be deleted. The staff considered the licensee's request, and determined that it is acceptable. This conclusion is based on the physical impossibility that the existing valves will be opened in excess of 70° during plant operation, and the fact that the future replacement valves need not be limited to less than 90° open.

Leakage tests of large butterfly valves installed in containment vent and purge systems have shown that resilient valve seat materials in these valves have a history of relatively rapid and severe failures (Reference: I&E Circular 77-11 dated September 6, 1977). Because of this, the TS include augmented testing requirements to ensure that seal degradation is detected and repaired in a timely manner. Large resiliently-seated vent and purge valves are required to be leak tested at 6-month intervals. In addition, the TS specify a leakage limit of 0.05 L_a for each valve. These requirements exceed those of 10 CFR Part 50, Appendix J, which specifies a 24-month test interval with no individual valve leakage limits, only a combined total leakage limit of 0.6 L_a for all penetrations.

The licensee requested changes to the TS to allow the new metal-to-metal seated valves to be tested in accordance with the 24-month test interval specified in 10 CFR Part 50, Appendix J, as modified by an exemption granted by our April 29, 1987, letter. The exemption authorizes alternate testing criteria to accommodate the unique WNP-2 annual, Spring refueling schedule. It allows up to 27 months between local leak rate tests in lieu of 24 months as prescribed by Appendix J, but imposes more stringent leak rate test acceptance criteria. Because the new valves do not rely on resilient seating seals, inclusion of these valves in the Type C testing interval of 24 months specified in 10 CFR Part 50, Appendix J is acceptable. The licensee's request to extend the exemption for a 27-month test interval is addressed in the separate exemption.

The licensee also requested deleting an out-of-date TS footnote pertaining to the containment purge cumulative time limit. When venting the primary containment, it is preferable to vent via the Standby Gas Treatment System (SGTS) to provide a filtered path for release for the effluent. However, should a LOCA occur while venting the containment using this pathway, the SGTS train in use could be damaged due to overpressurization. For this reason, in



a previous amendment, the staff granted a temporary, one-time increase in the 90 hour/year limit. This was implemented by the addition of a note to SR 4.6.1.8.3. The note expired April 10, 1988. Since the note is no longer effective, the licensee has proposed deleting it. The staff finds deletion of this note acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 14901). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

Pursuant to 10 CFR 51.32, an environmental assessment of the exemption from certain requirements of 10 CFR Part 50 Appendix J, related to these actions was published in the Federal Register on May 25, 1994 (59 FR 27075). Accordingly, the Commission has determined that the issuance of this exemption will not result in any environmental impacts beyond those evaluated in WNP-2's Final Environmental Statement.

6.0 CONCLUSION

The staff has reviewed the licensee's application to amend TS relating to containment purge and vent valves. The staff has performed a safety review of the supporting information provided by the licensee, and has evaluated the proposed changes against standard acceptance criteria for TS. Based on this review, the staff has determined that the proposed changes are acceptable.

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. O. Long

Date: June 15, 1994

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
Washington Public Power Supply System)	Docket No. 50-397
Nuclear Project No. 2 (WNP-2))	
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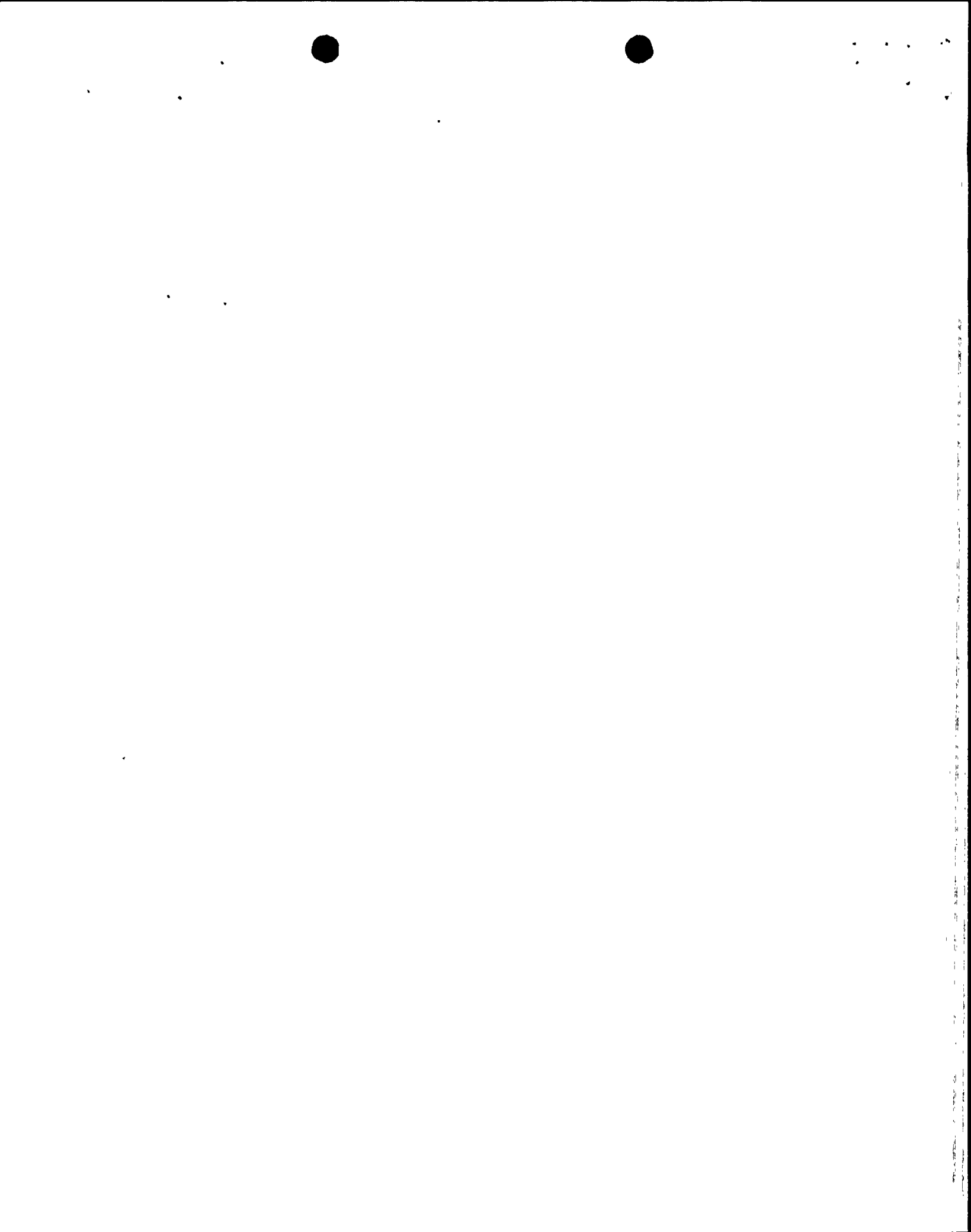
EXEMPTION

I.

Washington Public Power Supply System (the licensee) is the holder of Facility Operating License No. NPF-21 which authorizes operation of the WNP-2 Nuclear Plant at steady-state reactor power levels not in excess of 3323 megawatts thermal. The WNP-2 facility is a boiling water reactor located on Hanford Reservation in Benton County near Richland, Washington. The license provides, among other things, that it is subject to all rules, regulations, and Orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

II.

Paragraph III.D.3 of Appendix J to 10 CFR Part 50 requires, in part, that "Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than two years." By letter dated April 29, 1987, the staff issued an exemption from the requirement for Type C testing during each reactor refueling shutdown, and an extension of the maximum interval from 24 months to 27 months for Type B and C testing. This

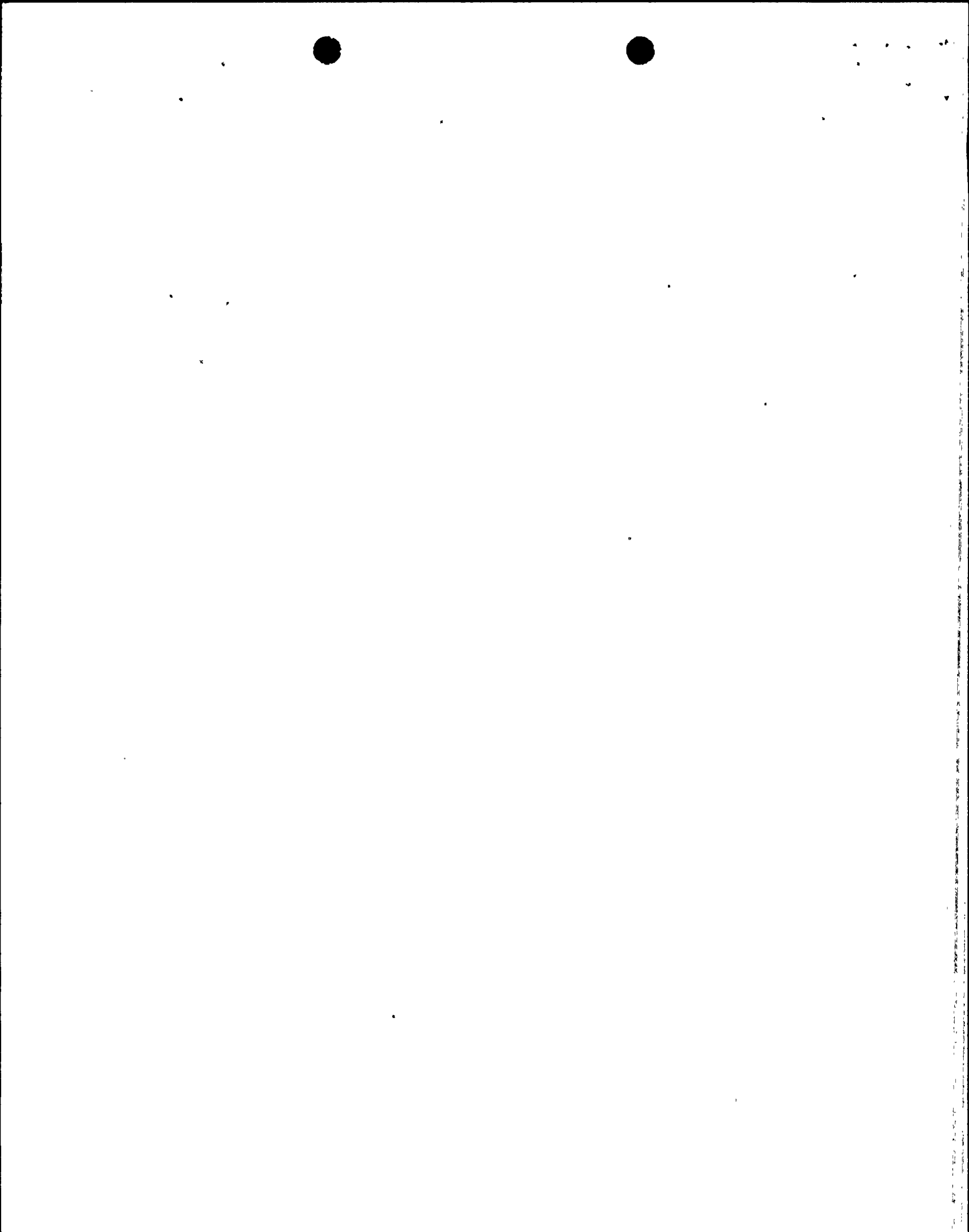


exemption specifically excluded Containment Purge Supply and Exhaust Valves, which the staff required to continue to be tested at the existing 6-month interval.

Pursuant to 10 CFR 50.12(a), the NRC may grant exemptions from the requirements of the regulations (1) which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security; and (2) where special circumstances are present.

III.

By letter dated March 25, 1994, the licensee requested an exemption from 10 CFR 50 Appendix J to allow Type C testing of Containment Purge Supply and Exhaust Valves with metal-to-metal seats at 27-month intervals. The licensee plans to replace approximately half of the valves during the 1994 refueling outage, and the remainder at a future date. No change to the 6-month test interval is requested for the remaining Containment Purge Supply and Exhaust Valves that have resilient seats. In a letter dated December 20, 1993, regarding an associated technical specification change request, the licensee stated that the new valves have been proven by industry experience and design to be capable of maintaining design requirements for leakage over an extended period of time. The licensee indicated that the replacement valves will be required to meet even tighter permissible leakage limits. Extending the maximum allowable interval between tests to 27 months is requested to allow for variations in the weather-related length of the approximately annual operating cycle from year to year. Details concerning the justification for extending the Type C test interval from 24 to 27 months are contained in the staff's letter granting the exemption dated April 29, 1987.



IV.

Accordingly, the Commission concluded that the licensee's proposed test schedule for the metal-to-metal seated Containment Purge Supply and Exhaust Valves is acceptable, and can be tested at a 27-month maximum interval. The remaining valves with resilient seats will continue to be tested every 6 months.

The special circumstances for granting this exemption pursuant to 10 CFR 50.12 have also been identified. As stated in part in 10 CFR 50.12(a)(2)(ii), special circumstances are present when application of the regulation in the particular circumstance is not necessary to achieve the underlying purpose of the rule. Application of the resilient-seated valve leak test requirements to metallic-seated valves would increase surveillance and maintenance costs for no increased safety benefit. The vendor certifies that appropriate leakage criteria are met, as applicable. The licensee states that the valve design, specifications, and qualification documentation for these valves verify that Type C leakage testing intervals are appropriate. The special circumstance of 10 CFR 50.12(a)(2)(ii) for extending the Type C leakage test interval from 24 months to 27 months is as described in the staff's letter granting the exemption dated April 29, 1987. Consequently, the Commission concludes that the special circumstances of 10 CFR 50.12(a)(2)(ii) exist in that application of the regulation in these particular circumstances is not necessary to achieve the underlying purpose of the rule.

V.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, this exemption as described in Section III. above is authorized by law, will not present an undue risk to the public health and safety, and is

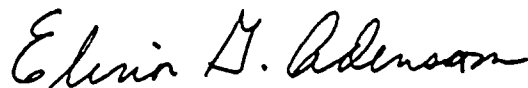
consistent with the common defense and security. The Commission further determines that special circumstances as provided in 10 CFR 50.12(a)(2)(ii) are present justifying the exemption.

Therefore, the Commission hereby grants an exemption from the requirement for Type C testing during each reactor refueling shutdown, with an extension of the maximum interval from 24 months to 27 months for Type C testing, as described in Section III. above.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the environment (59 FR 27075).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Elinor G. Adensam, Acting Director
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 15th day of June 1994

