

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
(WPPSS Nuclear Project No. 2)

Docket No. 50-397

EXEMPTION

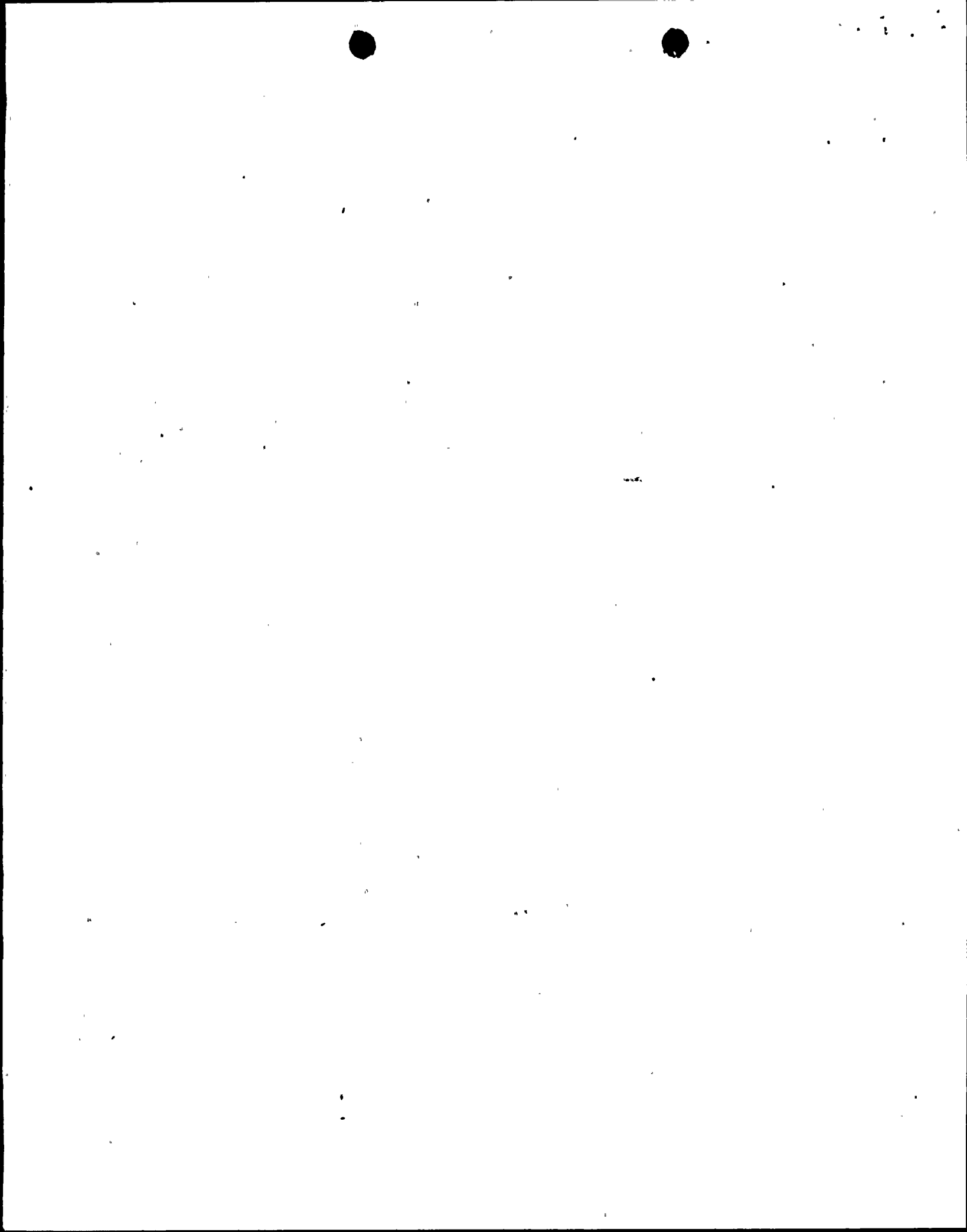
I.

Washington Public Power Supply System (WPPSS or the licensee) is the holder of Facility Operating License No. NPF-21 which authorizes the operation of the WPPSS Nuclear Project No. 2 (WNP-2 or the facility) at steady-state power levels not in excess of 3323 megawatts thermal. The license provides, among other things, that the facility is subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

The facility is a boiling water reactor (BWR) located at the licensee's site in Benton County, Washington.

II.

On February 14, 1973, the Commission published Appendix J to 10 CFR 50, "Reactor Containment Leakage Testing for Water-Cooled Power Reactors" (38 FR 4386). Revisions to Appendix J were published in the Federal Register on September 22, 1980 (45 FR 62789). Paragraph II.G of Appendix J defines "Type B tests", in part, as those intended to detect local leaks and to measure leakage across each pressure-containing or leakage-limiting boundary for specified containment penetrations. Paragraph II.D.2 declares that "Type B tests shall be performed during reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than two years." Paragraph II.H

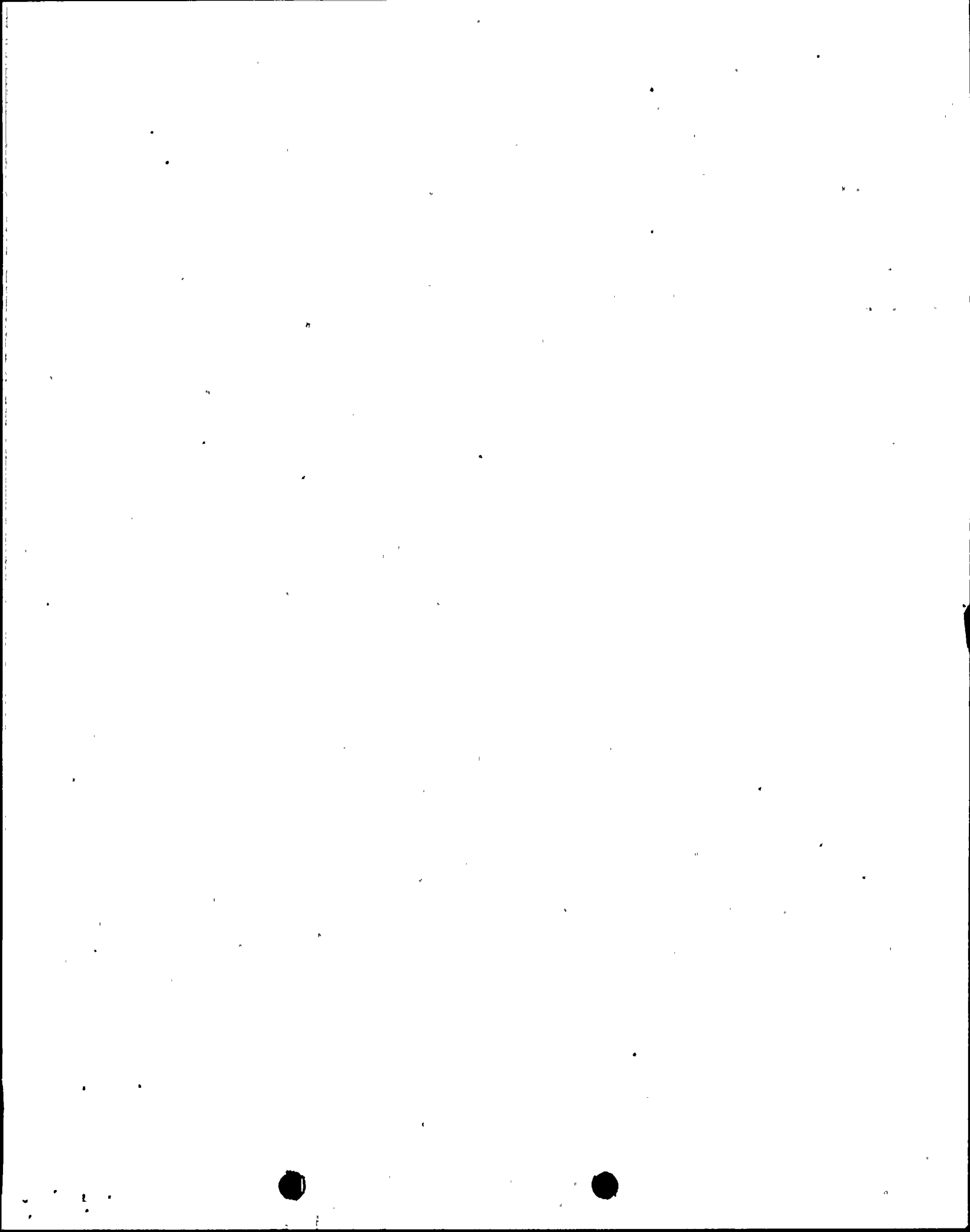


of Appendix J defines "Type C Tests", in part, as those intended to measure containment isolation valve leakage rates. Paragraph III.D.3 of Appendix J states, in part, "Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than two years." By letter dated January 31, 1986, the licensee requested an exemption from the requirement for the Type C testing during each reactor refueling shutdown, and an extension of the maximum interval from 24 to 27 months for both Type B and Type C testing. The Supply System is constrained by the relative abundance of hydro-electric power in the Pacific Northwest during the spring to shutdown every year at that time. Refueling is required during each of these shutdowns to ensure continuous operation throughout the remainder of the year when the availability of the nuclear power is critical. Thus the regulation and this weather related peculiarity require the Supply System to perform Type C testing on all specified valves every year. This exemption will permit Type C testing of each affected valve on a two-year cycle with approximately half of Type C valves tested each year during the spring refueling outage. In addition, the maximum allowable interval before retesting is extended to 27 months to allow for variations in the weather related length of the actual refueling cycle from year to year.

III.

To support the requested exemptions from the requirements of 10 CFR 50, Appendix J, the licensee provided the following rationale:

- A. The Bonneville Power Administration directs the licensee to refuel WNP-2 on a yearly basis, ideally coinciding with the peak period of hydro-electric generation. Strict compliance with Appendix J would require yearly testing of all Type C barriers. This frequent testing

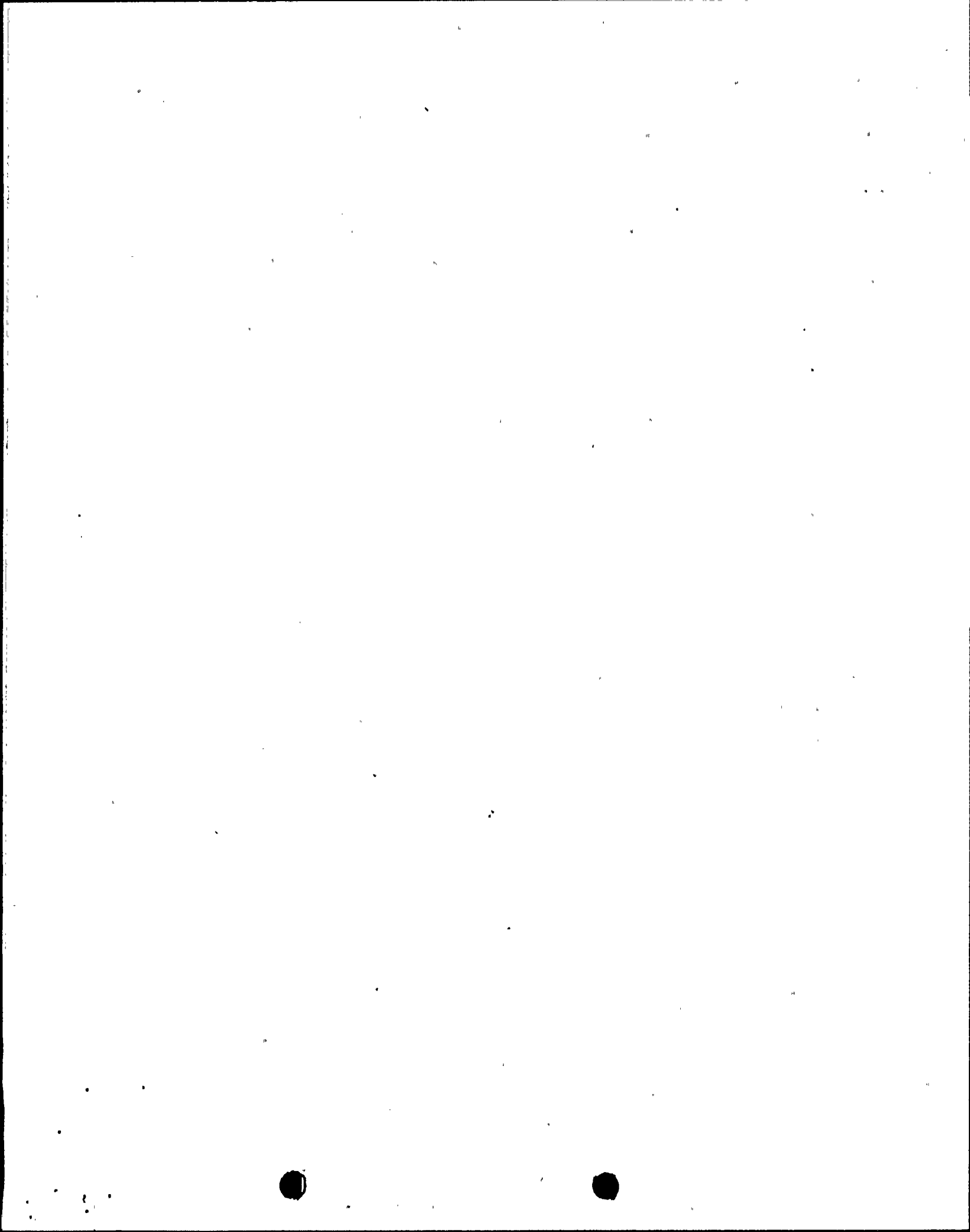


consumes more resources than appropriate, and is not in keeping with ALARA considerations.

- B. To utilize fully all sources of power production, WNP-2 refueling outages are established based on regional weather as indicated in Section II, above. This approach in scheduling results in either an early or late outage depending on the weather conditions for that particular year. The added variability of the refueling schedule, therefore, should be considered when establishing the allowed maximum interval between tests.
- C. The intent of Appendix J is to leak test during a refueling outage, but not to require a shutdown solely for local leak rate testing. Since forecasting the exact date for any given refueling outage is not exact, the three-month allowance to the two-year test interval would avoid unnecessary plant shutdowns at periods of greatest need.

The staff has reviewed the exemption requests and the associated justification, and believes that the technical rationale has merit. Based on a series of discussions, augmentations, and clarifications to the original request, the licensee has modified the original proposal via a series of letters dated April 11 and July 22, 1986, and January 9, February 11, March 4 and April 7, 1987. The program now consists of the following elements:

1. All barriers that are to be tested under the requirements of 10 CFR 50, Appendix J, have been placed into three groups. In one group are the valves that will be tested each refueling outage. The remaining barriers have been divided into two approximately equal groups. These two groups are the barriers that will be alternately tested in



- two consecutive refueling outages. Testing will be done in the "as found" condition prior to any maintenance or repair of the barrier.
2. All containment barriers tested under Appendix J will be at intervals not to exceed 27 months. Nominally, the maximum testing interval will be 24 months.
 3. The testing frequency of the following valves/penetrations will not be affected by this exemption or amendment.
 - (a) Main Steam Isolation Valves (tested at an interval not to exceed 18 months);
 - (b) Containment Purge Supply and Exhaust Valves (6 months);
 - (c) Personnel Airlock (6 months); and
 - (d) Reactor Feedwater Check Valves used for Containment Isolation (each refueling).
 4. For valves/penetrations which are to be tested every other refueling outage, the licensee will apply acceptance leakage criteria to the test results in addition to the requirements of Appendix J. The licensee's criteria are described below.

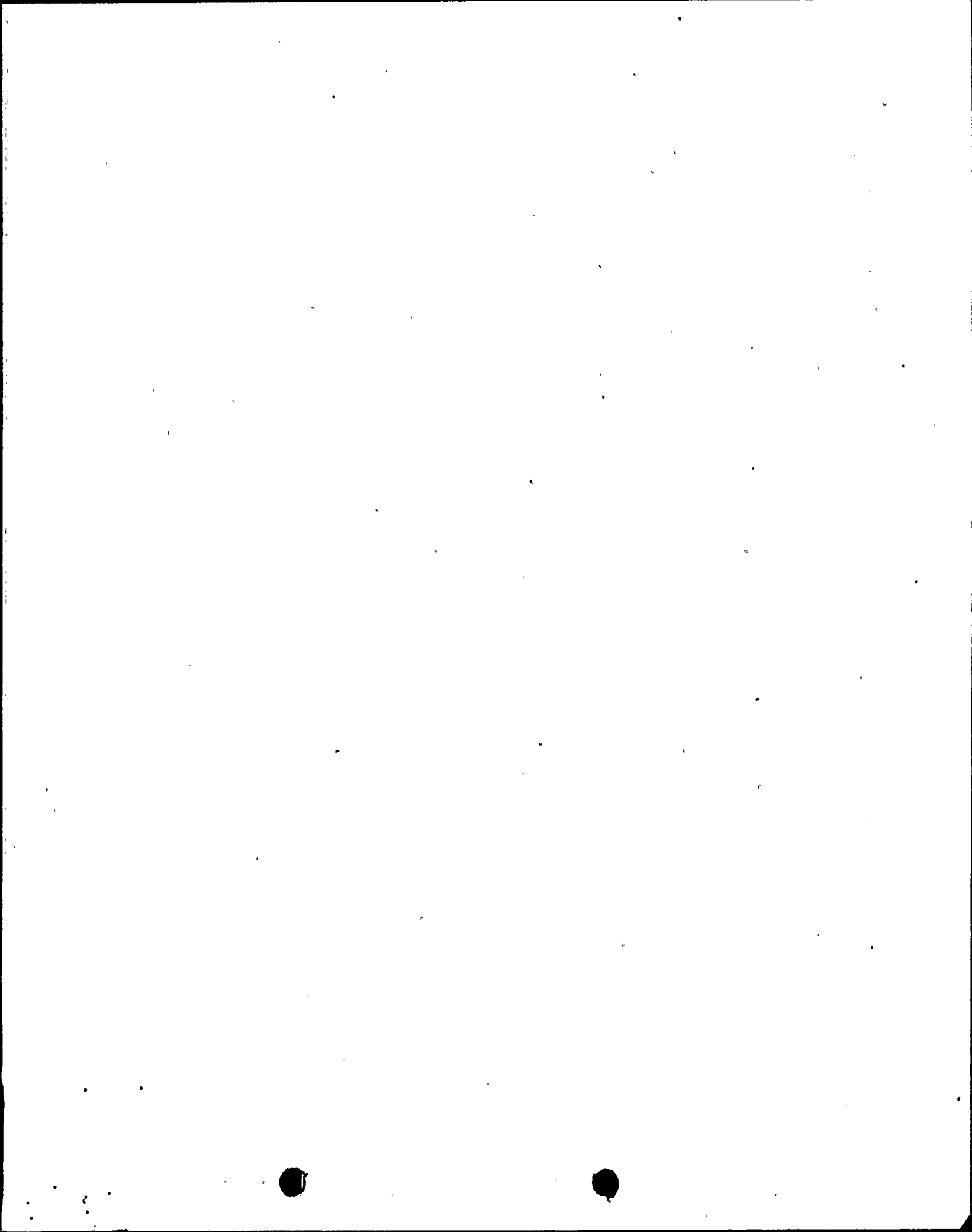
For valves, the leakage criterion is based on permissible leakage rates established by the ASME Code, Section XI, Article 3426. The methodology determines the leakage limit as a function of valve diameter using the following relationship for valves 10 inches in diameter or less:

$$L = 7.5 D$$

where:

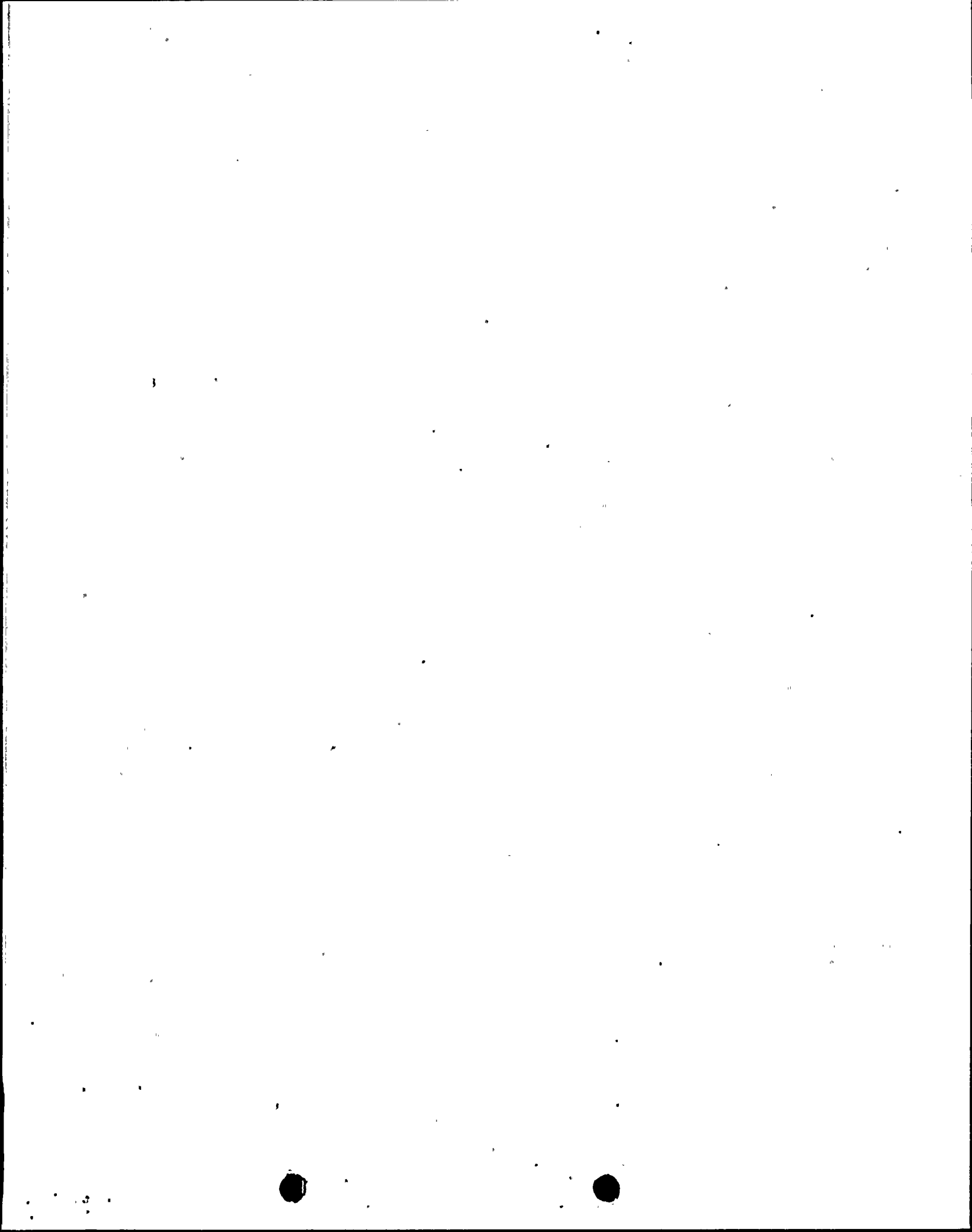
L = maximum permissible leakage rate, standard cubic feet per day. (scf/day); and

D = valve diameter (inches).



For valves greater than 10 inches, the allowable leakage limit will be 60 percent of the value obtained using the above formula. At the present time, WNP-2 has 346 valves in the group that will be assigned alternate yearly testing. The valve diameters range from 0.5 to 24 inches. Using the above criteria, the leakage limit in terms of La would vary between .001 La and .03 La. Assuming that every valve leaked at its limits, the maximum cumulative leakage for these valves would be 1.0 La. This total includes the valve leakage for valves greater than 10 inches using 60 percent of the calculated value.

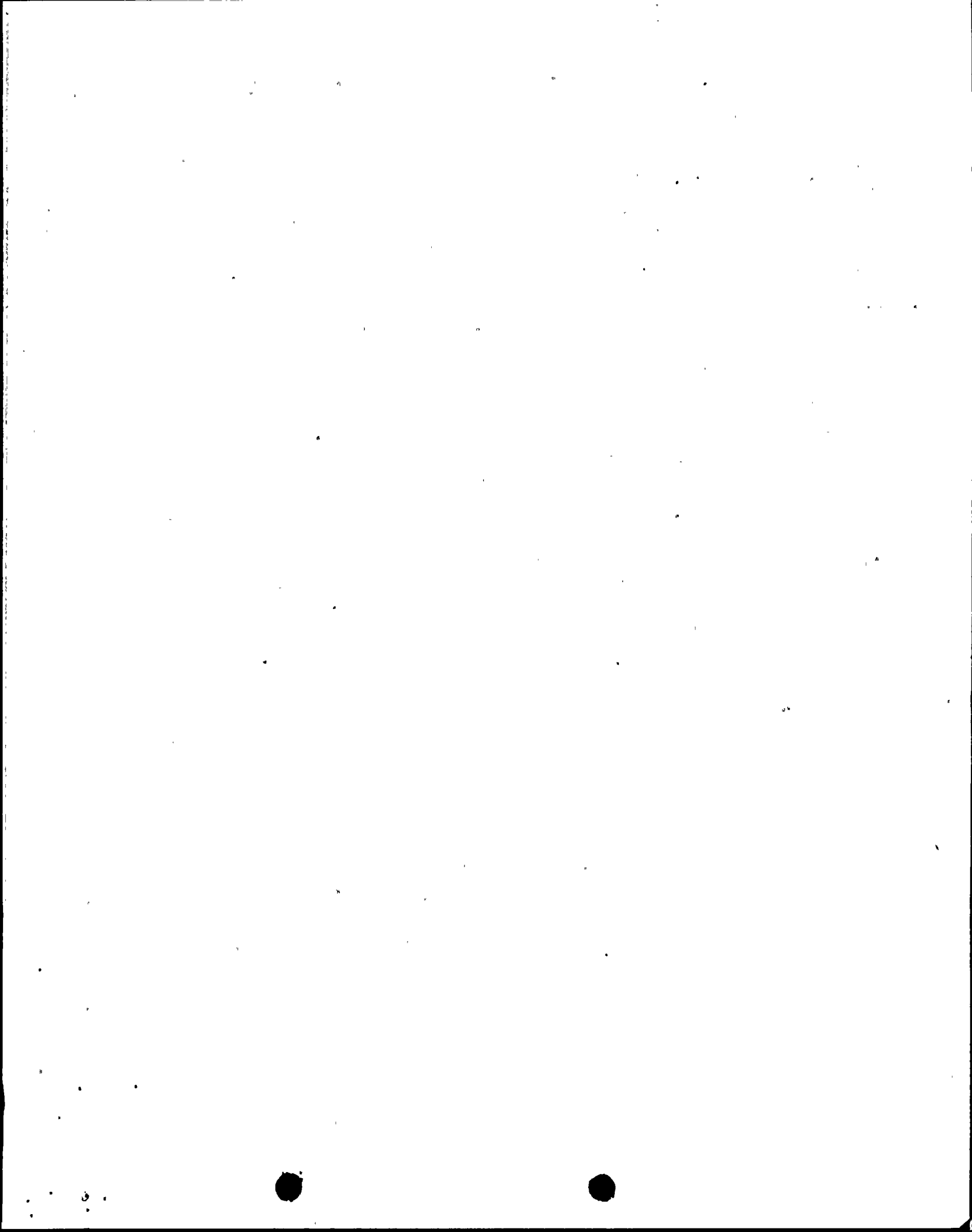
5. For the Type B penetrations, the licensee proposes to set the acceptance criterion for leakage at 50 standard cubic centimeters per minute (sccm) per penetration. These Type B penetrations include electrical penetrations, drywell head, equipment hatch, inspection ports, etc., but do not include airlocks. This leakage criterion is based on past experience of the licensee.
6. During each refueling outage, the combined Type B and C leakage will be computed based on "as left" leakage upon the completion of the current leakage tests. To obtain the total leakage, the "as left" leakage values for valves not tested during the current testing schedule will be used.
7. The individual barrier leakage criteria, if not met, will result in two actions. First, the barrier will be included in the group to be tested during the following refueling outage. Second, the barrier will be considered for repair during the current outage. The decision to repair will be made on a case-by-case basis.



8. Following each operating cycle refueling outage and prior to restarts the total "as left" Types B & C leakage rates shall not exceed 0.5 La (in lieu of the 0.6 La required by Appendix J). Additionally, if at any time during an operating cycle, the "as left" leakage total following maintenance exceeds 0.5 La, all Type B & C barriers will be tested during the next shutdown for refueling.
9. For the Type B and Type C testing programs, the reporting requirements of Appendix J will be augmented to include the information associated with the unique aspects of the WNP-2 program. In particular, the report will note the acceptance leakage criteria for each barrier as well as the barriers that failed the test criteria and consequently will be tested during the following refueling outage. Also included in the report will be the list of valves/penetrations not tested during the outage but that are scheduled to be tested during the next refueling outage.

To support their program, the licensee has reviewed the test data obtained to date from the WNP-2 plant. Three previous tests have shown that 70% of the isolation valves tested in the "as found" condition have leakages well below the proposed leakage criteria. These low leakage valves have resulted in over 50% of the penetrations being placed in a low leakage category.

The staff has reviewed all licensee submittals concerning the exemption requests and the proposed nine item test program summarized above. The staff finds that the unusual circumstances of the unpredictable timing of the spring snowmelt in the Pacific Northwest and its impact on the refueling schedule for WNP-2 creates an exceptional circumstance for the Supply System that warrants additional considerations relative to the imposition of the strict requirements of Appendix J. The staff also finds that the licensee's

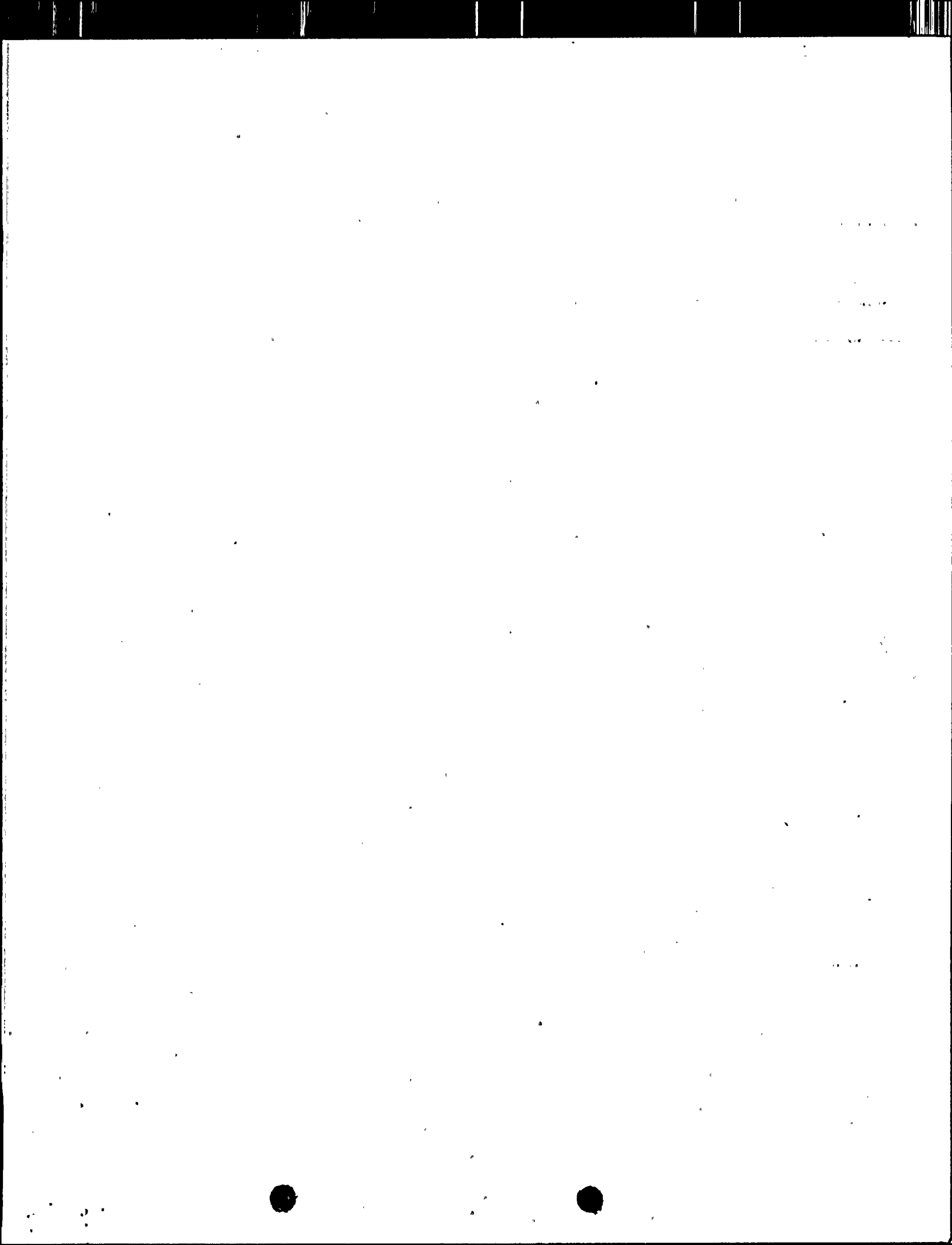


proposal for testing, summarized above as the nine point test program in conjunction with the proposed exemptions, fully meets the intent of Appendix J. Therefore, the licensee's proposed exemptions are acceptable.

Furthermore, based on the testing program proposed by the licensee in the series of seven letters identified above and summarized by the staff as a nine-point testing program, the licensee's proposed technical specification change (January 31, 1986 letter) is acceptable.

IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, this exemption 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)(iii), are present justifying the exemption, namely that application of the regulation in the particular circumstances would result in undue hardship and other costs that are significantly in excess of those contemplated when the regulation was adopted and that are significantly in excess of those incurred by others similarly situated. If the plant were forced to undergo Type C testing, solely to comply with the Appendix J regulation, an undue hardship and financial burden would result that would be significantly in excess of that contemplated when the regulation was adopted. When the regulation was adopted, it was contemplated that the testing would be accomplished during the normally anticipated and scheduled refueling outages that occur in most plants approximately every eighteen months. Thus the cost and hardship imposed on WNP-2 by failing to grant the exemption would be considerably in excess of that incurred by others similarly situated. Therefore the Commission hereby approves the following exemption requests:



Type C testing of containment isolation valves, as required by 10 CFR Part 50, Appendix J, Section III.D.3, Type C tests, need not be performed during each reactor shutdown for refueling but may be performed at other convenient intervals. The interval between successive Type B or Type C tests shall not exceed 27 months.

It is further determined that the exemption does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. In light of this determination and as reflected in the Environmental Assessment and Finding of No Significant Impact prepared pursuant to 10 CFR 51.2 and 51.30 through 51.32, it is concluded the instant action is insignificant from the standpoint of environmental impact and an environmental impact statement need not be prepared.

For further details with respect to this action, see the licensee's request dated January 31, 1986, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Richland Public Library, Swift and Northgate, Richland, Washington 99352. Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this Exemption will have no significant impact on the environment (52 FR 10834 dated April 3, 1987).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by

Gary M. Holahan, Acting Director
Division of Reactor Projects - III/IV/V
& Special Projects

Dated at Bethesda, Maryland
this 29th day of April, 1987.

*See Previous Concurrence

*DRSP/PD5

JLee
4/28/87

*DRSP/PD5

JBradfute:cd
4/24/87

*DRSP/PD5

BSamworth
4/28/87

*OGC

4/27/87

*DRSP/D:PD5

GWKnighton
4/28/87

Handwritten signature
DRSP
DCrutchfield
4/29/87

THE UNITED STATES OF AMERICA
DEPARTMENT OF JUSTICE
OFFICE OF THE ATTORNEY GENERAL
WASHINGTON, D. C. 20530

MEMORANDUM FOR THE ATTORNEY GENERAL

RE: [Illegible]

DATE: [Illegible]

[The following text is extremely faint and largely illegible due to the quality of the scan. It appears to be a memorandum detailing a legal matter, possibly involving a specific case or set of regulations. The text is organized into several paragraphs, with some lines appearing to be headings or sub-sections. The content is difficult to discern but seems to follow a standard memorandum format.]

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FOR THE NUCLEAR REGULATORY COMMISSION

Dennis Crutchfield, Director
Division Reactor Projects-III/IV/V
and Special Projects
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this day of , 1986.

no legal objection
HP
OGC
4/27/87

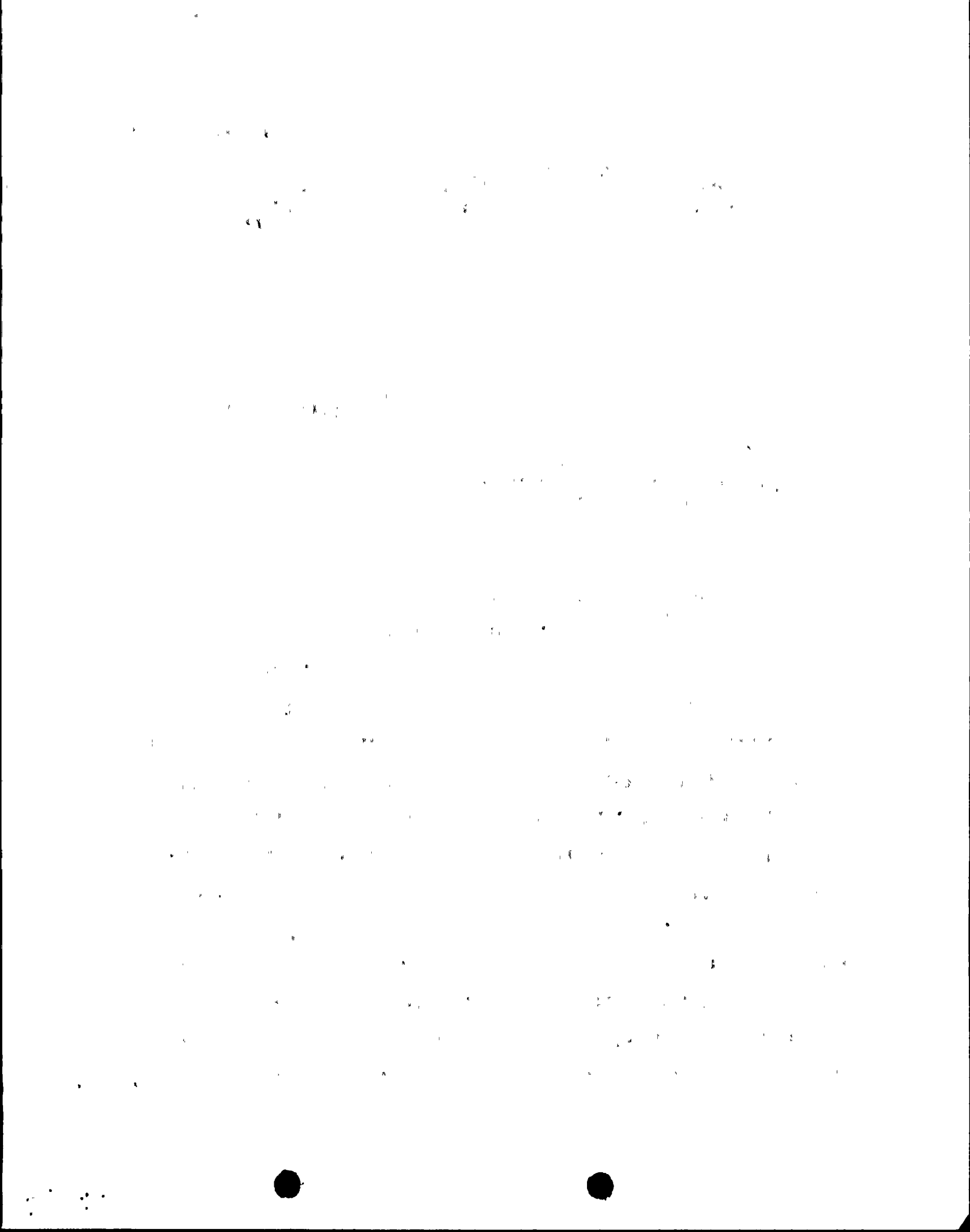
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Dennis M. Crutchfield, Director
Division Reactor Projects - III/IV/V
& Special Projects

Dated at Bethesda, Maryland
this day of , 1986.

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