



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. NPF-21  
WASHINGTON PUBLIC POWER SUPPLY SYSTEM  
WPPSS NUCLEAR PROJECT NO.2  
DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated December 1, 1987 (G02-87-278) Washington Public Power Supply System (WPPSS) requested an amendment to the WNP-2 Technical Specifications related to snubber testing. Specifically, WPPSS is seeking to modify snubber functional testing sampling plans as detailed in Technical Specification 4.7.4.e per the guidelines of the draft ANSI/ASME - OM-4 document (Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints). By letter dated March 18, 1988 (G02-88-067) WPPSS requested an editorial change to the first submittal. The March 18, 1988 request did not affect the substance of the amendment.

2.0 DISCUSSION

The first of three approved sampling plans, the "10 percent plan", described in Specification 4.7.4.e(1) requires 10% of the snubbers to be tested periodically. It requires testing of an additional 10% of the snubbers for each snubber not meeting the acceptance criteria of Specification 4.7.4.f. The proposed change modifies this plan to require only a 5% additional testing for each snubber that fails functional testing as presently required.

The second sampling plan, the "37 plan", described in Specification 4.7.4e(2) requires that a representative sample of snubbers be tested periodically in accordance with Figure 4.7-1 of Technical Specification 4.7.4. Figure 4.7-1 provides the acceptance criteria for the functional test results and denotes a "reject" region and a "continue testing" region. If at any time the plotted test results fall within this "reject" region, then all snubbers are to be functionally tested.

The proposed change revises surveillance requirement 4.7.4.e(2) and Figure 4.7-1 to delete the "reject" region and substitute an expanded "continue testing" region. With the deletion of the "reject" line plotting of results by lot or individual basis becomes a moot point because snubbers must continue to be tested until the point falls into the "accept" region or until all snubbers have been tested.

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The proposed change also deletes references to the "reject" region in the text of Specification 4.7.4.e(2) and bases 3/4.7.4. In the December 1, 1987 submittal, the licensee proposed that bases 3/4.7.4 be supplemented by a footnote such that if testing continues to be between 100-200 snubbers and the accept region has not been attained, then the actual percent of population quality of greater than or equal to 5% failed snubbers will probably result in extended testing. The staff finds that the footnote does not add to or clarify the Technical Specification requirements. By letter dated March 18, 1988, the licensee retracted the proposal for the footnote.

The third sampling plan, the "55 plan", described in Specification 4.7.4.e(3) also requires that a representative sample of snubbers be periodically tested. Deleting the "reject" line from the "37 plan" makes the "55 plan" unnecessary and as such it is proposed to be deleted.

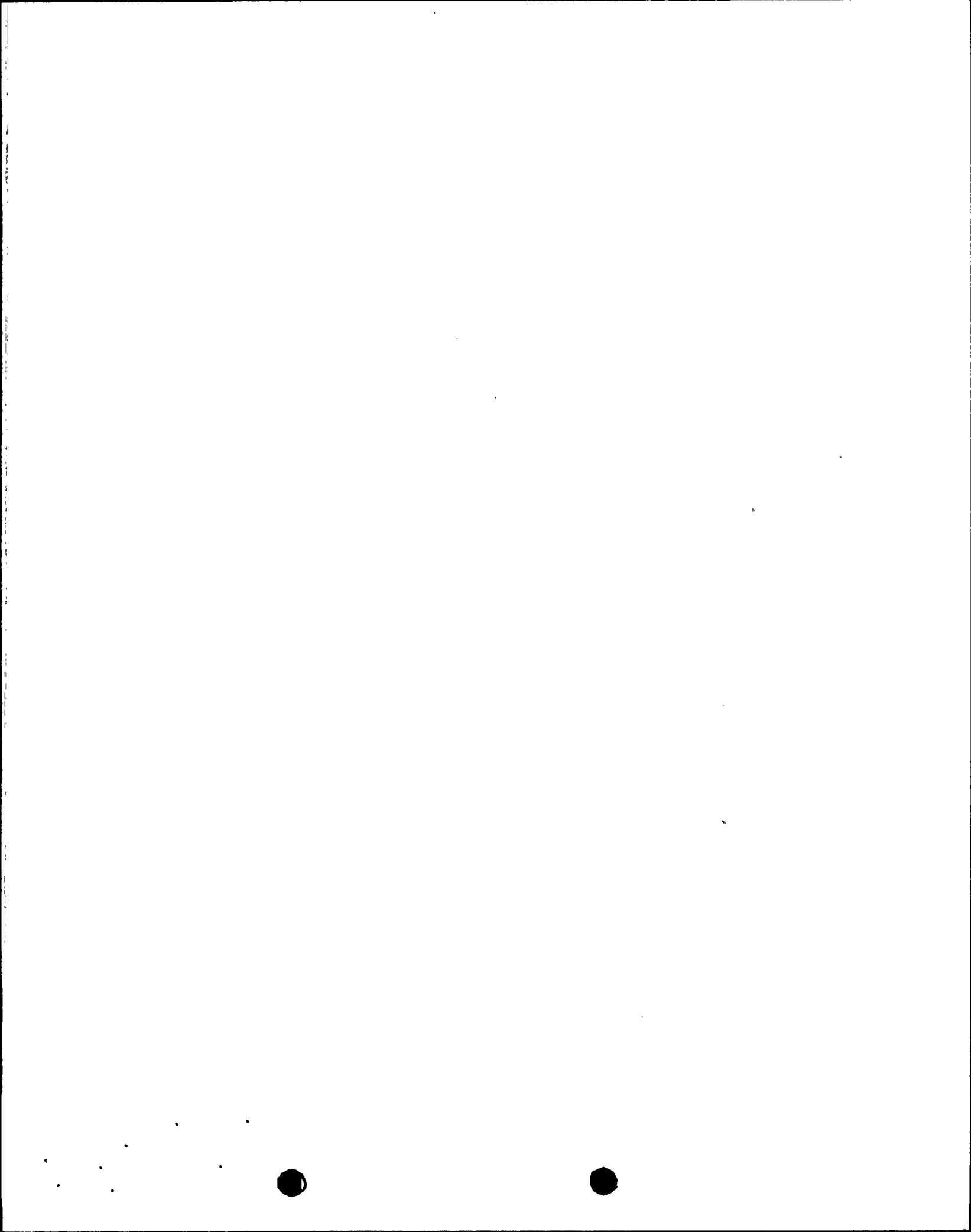
### 3.0 EVALUATION

The proposed change in the first of the sampling plans to require 5% additional testing for each snubber that fails function testing as opposed to 10% additional testing as presently required, removes an inconsistency in the sampling plans. The initial sample size of 10% for plan 1 was selected on the basis that the number of snubbers tested every 15 years will be at least as large as the number of snubbers in the plant when the associated functional testing period is 18 months. The subsequential sample size of 10%, however, was an arbitrary choice. Since all three sampling plans are acceptable, adopting either one of the plans should yield the same results. Yet for a population that would produce the same initial sample size for plans 1 and 2 or 1 and 3, the subsequential sample sizes will differ by twice as much. Revision of the arbitrarily determined subsequential size from 10% to 5%, as proposed will bring all three plans on an equal basis. The American Society of Mechanical Engineers Operation and Maintenance (O&M) Working Group 4 Standard "Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints (Snubbers)", has taken this into consideration, and changed the subsequential sample size from 10% to 5% for plan 1. The standard was approved by NRC and is being adopted by ASME Boiler & Pressure Vessel Code Section XI for plant surveillance guidance. This change will reduce the amount of additional testing required and thus reduce man-rem exposure and safety concerns associated with unnecessary functional testing.

Regarding the proposed changes in the second sampling plan, the acceptance criteria (represented by Figure 4.7-1 in the Technical Specifications) were developed using "Wald's Sequential Probability Ratio Plan". Statistical studies using Wald's sequential sampling plan indicate that

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\*Number of snubbers not meeting the acceptance criteria "C"/number of snubbers tested "N".

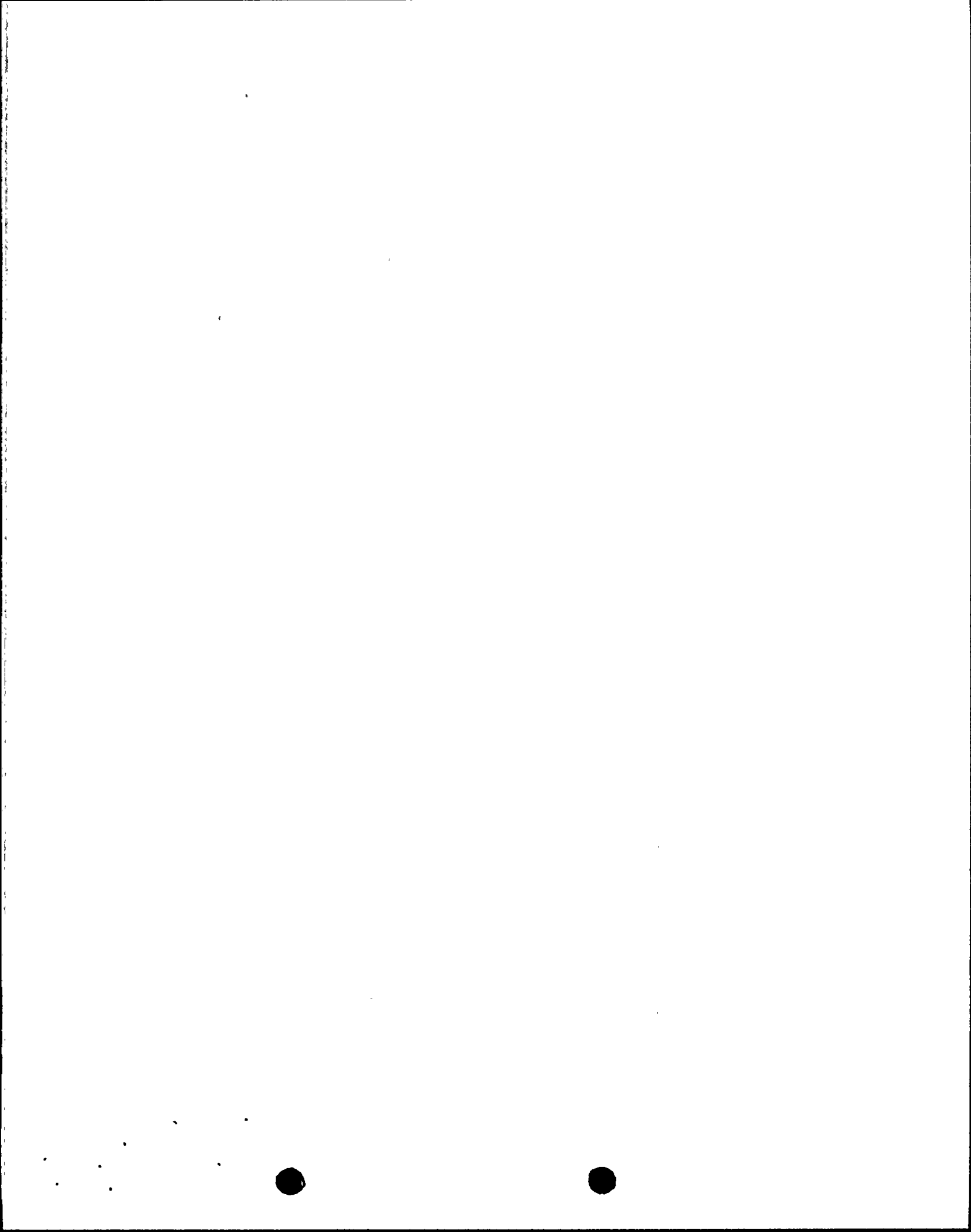


a major change in the reject line caused an insignificant change in the accept line or in other words acceptance is independent of rejection. These studies also demonstrate that while the probability of false acceptance of a bad snubber population under the proposed amendment still exists it is negligible. As long as the "reject" line remains in the sample plan there is some possibility of rejecting a good snubber population and consequently requiring an unnecessary 100% functional testing of snubbers with attendant ALARA and safety concerns, manpower utilization and outage extension. The proposed technical specification change will alleviate these problems and still ensure continued or additional testing if snubber quality of failed snubbers is equal to or greater than 5%.

The proposed deletion of the third sampling plan, described in Technical Specification 4.7.4.e(3), is justified because the deletion of the reject line from the "37 plan" makes the sampling plan unnecessary. In addition it is not a Wald sequential plan and as such has also been deleted from the ANSI/ASME OM-4 draft document.

The proposed change in Technical Specification 4.7.4.e clarifies additional functional testing requirements due to failure of snubbers. Technical Specification 4.7.4.e states that if during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional test results shall be reviewed at that time to determine whether additional samples should be limited to the type of snubber which has failed the functional testing. The proposed change allows categorization of unacceptable snubbers into failure mode groups. A test failure mode group shall include all unacceptable snubbers that have a given failure mode and all other snubbers subject to the same failure mode. It allows independent testing of failure mode groups based on the number of unacceptable snubbers and requires one additional test sample from the general population for each failure mode group to provide assurance that failure mode groups have been properly established. This change is consistent with the ASME OM-4 document.

The proposed change to Technical Specification 4.7.4.g addresses the functional test failure analysis of locked up snubbers. Technical Specification 4.7.4.g states that if the cause of the locked up snubbers is due to manufacturer or design deficiency, all snubbers of the same type, subject to the same defect, shall be functionally tested. The proposed change includes unexpected transient events as a cause of locked up snubbers in addition to manufacturer or design deficiency and changes the requirement of mandatory functional testing of this type of failure mode group snubbers to evaluation in a manner (stroking, testing, replacement etc.) to ensure their operability. For mechanical snubbers, this evaluation of operability can easily be demonstrated by determining the freedom of motion by stroking the snubbers rather than functional testing. This will provide better manpower utilization, reduce man-rem exposure and safety concerns associated with unnecessary functional testing. All locked snubbers shall be replaced or repaired to original qualified condition. This change to evaluation in a manner to ensure operability rather than mandatory functional testing has previously been reviewed and approved on another plant.



#### 4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.32, an environmental assessment has been published (53 FR 11577) in the Federal Register on April 7, 1988. Accordingly, the Commission has determined that the issuance of this amendment will not result in any environmental impacts other than those evaluated in the Final Environmental Statement.

#### 5.0 CONTACT WITH STATE OFFICIAL

The State of Washington advised by letter dated March 23, 1988 that they did not have any comment.

#### 6.0 CONCLUSION

The changes proposed by the licensee have been reviewed by the staff and have been found to be acceptable because they will eliminate unnecessary testing of snubbers resulting in reduced man-rem exposure without undermining the effectiveness of the overall surveillance program. The proposed changes will also clarify certain functional testing and failure analysis requirements as presently stated in the Technical Specification.

The Commission has issued a Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Prior Hearing which was published in the Federal Register (53 FR 7269) on March 7, 1988. No request for hearing or petition for leave to intervene was filed following this notice.

We have 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, and  
(2) such activities will be conducted in compliance with the Commission's regulations and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: April 11, 1988

