



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 93 TO FACILITY OPERATING LICENSE NO. DPR-39  
AND AMENDMENT NO. 83 TO FACILITY OPERATING LICENSE NO. DPR-48

COMMONWEALTH EDISON COMPANY

ZION NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NOS. 50-295 AND 50-304

INTRODUCTION

By letter dated June 28, 1985 (P. C. LeBlond, Nuclear Licensing Administrator to H. R. Denton, NRR), Commonwealth Edison Company requested amendments to Facility Operating Licenses No. DPR-39 and No. DPR-48 for the Zion Nuclear Power Station concerning the operability and surveillance testing of both mechanical and hydraulic snubbers. This Safety Evaluation documents a review of the requested revision and its impact on the operation and administration of plant activities.

EVALUATION

In their submittal of June 28, 1985 the licensee has proposed a complete revision to Sections 3.22 and 4.22 concerning shock suppressor (snubber) Limiting Conditions for Operation (LCO) and Surveillance Requirements. The changes in general follow the guidance of Westinghouse Standard Technical Specifications (STS), NUREG-0452 Revision 4. These STS were later modified by Generic Letter 84-13, dated May 3, 1985 to permit removal of snubber listings from TS; however, the requirements for operability, surveillance testing, and test acceptance criteria remained unchanged.

Because the mechanical and hydraulic snubbers have different visual and functional testing criteria, the licensee has divided Section 3.22 into subsections, 3.22.1 covering mechanical snubbers and 3.22.2 for hydraulic snubbers. Subsection 3.22.1 for mechanical snubbers is identical with STS in that it requires operability of all safety-related mechanical snubbers in the required operational modes including Mode 7, Low Power Physics Tests. It also provides the same action guidance and surveillance requirements. Therefore, the staff finds the proposed mechanical snubber TS, Section 3.22.1, to be acceptable.

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For hydraulic snubbers TS, Subsection 3.22.2, the licensee has proposed essentially the same wording as STS for operability requirements, operational modes, and actions required if one or more snubbers are determined to be inoperable. The surveillance requirements have been changed somewhat from existing TS in the visual inspection time intervals, increasing the interval from 12 months to 18 months if no hydraulic snubbers have been previously found inoperable. This is the same interval specified in STS when no snubbers have been found inoperable in the previous inspection. The other proposed inspection intervals remain the same as those in the current TS. The visual inspection acceptance criteria proposed is identical to that in STS.

For functional testing of hydraulic snubbers, the licensee has proposed separate functional test requirements for large bore snubbers, i.e., those having a rated full load capacity greater than 50,000 lbs. This applies only to the 16 steam generator snubbers at each unit. Functional testing of these large bore snubbers is exempted in the current TS. The proposed TS will require that at least one large bore snubber be tested each refueling outage and be selected from those snubbers that have not been previously tested. For each snubber found inoperable, an additional two snubbers will be tested until no failures occur or all snubbers have been tested.

For all hydraulic snubbers other than large bore, the proposed TS require 10 snubbers to be tested each refueling outage and for each inoperable snubber found an additional 10 snubbers will be tested. This is the same as the current TS requirements, but differs from STS which requires 10% of the snubbers be tested each 18 months. Since each Zion Unit uses approximately 540 safety-related small bore snubbers, this would require 54 snubbers be tested each refueling period. The licensee has stated in the submittal summary, that they have in place a Preventive Maintenance (PM) Program which requires the rebuilding of all snubbers on a five to seven year basis so that approximately 100 snubbers are reworked and tested each refueling outage. Thus, more than 110 snubbers will be tested each refueling.

The STS functional test representative sampling selection requirement has been included in the proposed TS change, requiring at least 25 percent of the snubbers in the periodic sampling to include the first snubber away from each reactor vessel nozzle, snubbers within five feet of heavy equipment, and snubbers within 10 feet of the discharge from a safety relief valve. The proposed TS includes the STS requirement to retest any snubbers which failed the previous functional test even if it has been replaced with another snubber in that position; the replacement snubber will also be tested.

The proposed TS also includes the STS requirement to determine the cause of snubber failure. If it is caused during manufacture or by a design deficiency, all other snubbers of the same design subject to the same defect will be functionally tested. An engineering evaluation will also be performed on the components supported by the inoperative snubber to determine if the component is still capable of meeting its designed function.

The bases for Sections 3.22 and 4.22 remain the same as current TS with the added information for the snubber service life monitoring requirement. The licensee has also added the requirement to retain snubber records for the life of the plant in TS Item 6.5.B.16.

The staff has reviewed the proposed TS changes and found them to be consistent with the requirements promulgated by STS with the exception of the number of small bore snubbers selected for testing each refueling outage. Since there are approximately 540 snubbers of this type for each Zion Unit, STS would require 54 snubbers be tested each refueling while the proposed TS require 10. While this appears to be a discrepancy, the existing PM program at Zion Station requires all snubbers other than the 16 steam generator snubbers to be reworked and tested during a five year period. The PM program requires overhauling approximately 110 snubbers each period. The PM program has been in place for four years and following the next refueling in 1986, all polypropylene seals will have been replaced with ones made of ethylene-propylene material.

In addition to the 110 reworked and tested snubbers, 10 snubbers are randomly selected for testing each refueling and any snubbers determined to be inoperable during the visual inspection of all snubbers are also tested. Thus over 20 percent of the snubbers are tested each refueling. The staff concurs with the proposed test frequency because the large number of snubbers overhauled and tested each refueling period gives greater assurance of operability than testing a larger sampling alone as required by STS.

The licensee overhauled all large bore snubbers in 1981 and again in 1985. The overhaul includes seal replacement; cleaning of lines, ports, and reservoir; testing of springs and replacement if necessary; inspection; and operational testing. Plant modifications are being made so that the large bore snubbers can be tested in place. The licensee plans to overhaul all the snubbers at one time every five years.

The staff agrees that the large bore snubbers should not be exempt from testing as permitted in the current TS and concurs with the proposed annual visual inspection of these snubbers and the functional testing of one snubber per refueling since this meets the intent of STS.

#### ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these amendments involve 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 these amendments.

### CONCLUSION

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 the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: January 22, 1986

### PRINCIPAL CONTRIBUTORS:

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