U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-237/79-05

Docket No. 50-237 License No. DPR-19

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, IL 60690

Facility Name: Dresden Nuclear Power Station, Unit 2

Inspection At: Dresden Site, Morris, Illinois
Sargent and Lundy Engineers, Chicago, Illinois

Inspection Conducted: March 29-30 and April 11-12, 1979, at the site.
April 13, 1979, at S&L office.

Inspector: T. T. Yin 4/23/79

Approved By: D. H. Danielson, Chief 4/23/79
Engineering Support Section 2

Inspection Summary

Inspection on March 29-30 and April 11-13, 1979 (Report No. 50-237/79-05)
Areas Inspected: Review of licensee surveillance of safety related hangers and snubbers including applicable procedures, previous licensee inspection records, and observation of hardware installation conditions. The inspection involved a total of 23 inspector-hours onsite by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Commonwealth Edison Company (CECo)

*B. B. Stephenson, Station Superintendent
*H. L. Gustin, Station Nuclear Engineer, General Office
*J. D. Brunner, Modification Project Engineer, Technical Staff
*S. W. Harris, Engineer Associate, Technical Staff
*E. D. Eenigenberg, Maintenance Engineer
*R. D. Geier, QA Engineer

Sargent and Lundy Engineers (S&L)

F. P. Tsai, Mechanical Project Engineer
T. J. Victorine, Project Manager
R. J. Mazza, Project Director
E. B. Branch, Head, Engineering Mechanics Department (EMD)
G. T. Kitz, Assistant Head, EMD
S. Azzozy, EMD Project Engineer

*Denotes those attending the exit interview on April 12, 1979, at the site.

Functional or Program Areas Inspected

1. Review of Unit 2 Snubber Technical Specification (TS) Surveillance and Test Procedures

   a. The limiting condition for plant operation relative to safety related snubbers operability is contained in TS Section 3.6.I, and the snubber surveillance requirements are stated in TS Section 4.6.I. A list of safety related snubbers with location descriptions is also included in TS Section 3.6.I, Table 3.6.1.

   b. The procedure for inspecting hydraulic snubbers is contained in Dresden Technical Staff Procedures. There are 50 safety related snubbers in Unit 2; 12 Bergen-Patterson (B-P) hydraulic snubbers are located in the Torus floor area, 15 B-P snubbers and 10 Pacific Scientific Company (PSC) mechanical snubbers are located inside the drywell, and 3 ITT-Grinnell (ITT-G) hydraulic snubbers are located in the isolation condenser pipeway area. The inspector reviewed portions of procedure DTS 020-1, "Snubber Inspection," Rev. 2, dated March 1978, Dresden Station Unit 2 and had the following comments:

(1) The design cold position settings (CPS's) were not included in the procedure. The measured CPS's could not be compared with design value. This is an unresolved item. (237/79-05-01)

(2) The procedure did not require identification of leak locations on the hydraulic snubbers to determine the significance of the problem and whether or not the unit should be functionally tested for operability. This is an unresolved item. (237/79-05-02)

c. The inspector reviewed Maintenance Procedures: (1) DMP 212, "Bergen-Patterson 2 1/2", 3 1/4" and 4" Snubber Inspection and Repair," Rev. 3, dated Arpil 1978, and (2) DMP 529, "Units 1-2-3 Grinnell Snubbers Inspection and Repair," Rev. 1, dated May 1978, and commented that the procedure did not establish acceptance criteria for snubber functional testings in that no acceptable lock up velocity and bleed rate range was identified. This is an unresolved item (237/79-05-03)

The licensee's representative stated that mechanical snubbers will replace all hydraulic snubbers in the next two refueling cold shutdown outages. At present, the requirements of functional testing of hydraulic and mechanical snubbers for all CECo operating plants are under review by the CECo Station Nuclear Engineering Department, General Office. A report issued by EDS Nuclear Incorporated, "Snubber Testing Criteria; Quad Cities Nuclear Generating Station, CECo," dated December 1978, was presented to the inspector for review and comments.

No items of noncompliance or deviations were identified.

2. Control for Snubber Replacement

The evaluation provisions, and controls for replacing hydraulic snubbers with PSC mechanical snubbers in three refueling outages were reviewed by the inspector. The documents reviewed included: (1) modification approval sheets, (2) modification checklists, (3) CECo Corporate letter to the station on February 22, 1977, subject "Replacement of Hydraulic Snubbers in the Dresden Units 2 and 3 Drywell with Mechanical Snubbers" (modifications M12-2-77-2, M12-3-77-2 and AIR 12-77-8), (4) CECo safety evaluation based on 10 CFR 50.59 requirements, (5) special project request, DR-386, and (6) Work Order No. 123408.

No items of noncompliance or deviations were identified.

3. Review of Past Station Snubber Inspection Records

The inspector reviewed the above subject matter recorded during the 1977 refueling outage and identified two safety related B-P hydraulic 6" stroke snubbers inside the drywell that may have excessively extended or contracted piston rod settings.

- Snubber No. 14 - 6" measured (5 1/4" actual)

- Snubber No. 21 - 1 1/2" measured (1/2" actual)

A review of the documents at the site indicated the design settings should be:

- Snubber No. 14 - 2 3/4" CPS determined by a Sargent and Lundy study.

- Snubber No. 21 - 4 1/4" and 3 1/2" HPS.

The licensee committed to correct these two snubbers prior to plant startup.

In addition, three questionable non-safety related B-P snubbers in the turbine pipeway areas were identified by the inspector.

- Snubber No. 1 - 1 1/2" measured (1/2" actual)

- Snubber No. 6 - 1 1/2" measured (1/2" actual)

- Snubber No. 7 - 1" measured (0" actual)

The licensee stated that these three snubbers will be evaluated and corrected if necessary prior to plant startup.

This item is considered unresolved. (237/79-05-04)

No items of noncompliance or deviations were identified.

4. Observation of Hanger and Snubber Installations

The inspector observed approximately fifteen hangers and snubbers inside the Unit 2 drywell and found no signs of significant hydraulic snubber leakage and the overall condition of the PSC mechanical snubbers appeared to be good. The inspector noted a few questionable areas that should be addressed by the licensee.

a. On drywell elevation 502'-4", B-P snubbers No. 9 and No. 13 on Recirculation Pump B shown shiny piston rod extension of 3/4" and 5/16" respectively; likewise with B-P snubbers No. 12 and No. 14 on Recirculation Pump A. These pump thermal movements are towards the reactor vessel (RV). A review of GE drawings disclosed snubbers No. 9 and No. 12 should have a 1/4" thermal movement towards the RV. The difference between measured and actual pump movement will be further reviewed by the licensee. This is an unresolved item. (237/79-05-05)

b. In conjunction with Item a. above, snubbers No. 13 and No. 14 were not shown on GE drawings. The design requirements and installation records for these snubbers were not apparent. This is an unresolved item. (237/79-05-06)

c. The surface of B-P snubber No. 9 on Recirculation Pump B was covered with rust and a powder like substance. The piston rod conditions and operability of the snubber needed further inspection. This is an unresolved item. (237/79-05-07)

d. On one of the constant spring hangers observed at drywell elevation 515'-4", the load indicator pointed outside the white (cold) dot. The inspection and surveillance program for the constant and variable spring hangers will be reviewed further. This is an unresolved item. (237/79-05-08)

e. PSC mechanical snubbers No. 22M and No. 26M were removed and tested for freedom at slow striking motion and ability to lock-up at quick movements. No problem areas had been identified.

f. On drywell floor elevation 537'-4" there are two pairs of B-P snubbers installed on the Target Rock safety relief valve. Snubbers No. 32 and No. 33 are installed on the discharge line 5^{o} to 10^{o} apart, snubbers No. 34 and No. 35 are installed on the inlet side of the valve near the main steam line approximately 30^{o} apart in the same general direction as snubbers No. 32 and No. 33. The inspector questioned the design intent versus the system configuration.

Subsequent to the site inspection, a meeting was held at S&L on April 13, 1979, to discuss the above conditions and to review the piping analysis. The calculation indicates snubbers No. 32 and No. 33 are 12^{o} apart, and snubbers No. 34 and No. 35 are 60^{o} apart. After the meeting, the licensee performed accurate angle measurements

at the site and found the angle between snubbers No. 34 and No. 35 to be 51°. The inspector stated the deviations appeared to be acceptable.

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. Eight unresolved items disclosed during the inspection are discussed in Paragraphs 1.b.(1), 1.b.(2), 1.c, 3, 4.a, 4.b, 4.c, and 4.d.

Exit Interview

The inspector met with licensee representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on April 12, 1979. The inspector summarized the purpose and findings of the inspection. The licensee acknowledged the findings reported herein.