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June 17, 1994

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: NRC Bulletin 93-02, Supplement 1, Debris
Plugging of Emergency Core Cooling Suction
Strainers, dated February 18, 1994.

- Reference:
1. S. LaBruna letter to BWR Owners' Group Executives (BWROG-94029); Operator Guidance for Potential Blockage of ECCS Pump Suction Strainers, Dated March 15, 1994.
 2. L. O. DelGeorge letter to Office of Nuclear Reactor Regulation, USNRC; Commonwealth Edison Company Response to NRC Bulletin 93-02 Supplement 1, "Debris Plugging of Emergency Core Cooling Suction Strainers," Dated April, 29, 1994.
 3. M. J. Vonk letter to Office of Nuclear Reactor Regulation, USNRC; LaSalle County Nuclear Power Station Units 1 and 2, Supplemental Response to NRC Bulletin 93-02, "Debris Plugging of Emergency Core Cooling Suction Strainers." Dated June 2, 1994

This letter transmits LaSalle Station's response (Attachment A) to NRC Bulletin 93-02, Supplement 1, documenting status and/or completion of actions committed to in Reference 2. The original bulletin discussed an event which occurred at Perry Station where debris consisting of glass fibers and corrosion products was found caught in the Emergency Core Cooling System (ECCS) suction strainers. The debris consisted of glass fibers from temporary drywell cooling filters that had been inadvertently dropped into the suppression pool, and corrosion products that had been filtered from the pool by the glass fibers adhering to the surface of the strainer. As a result, NRC Bulletin 93-02 was issued. The bulletin requested that licensees remove any fibrous material installed or stored in the primary containment that is not designed to withstand a Loss of Coolant Accident (LOCA). The

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supplement addresses operator compensatory actions in the event of debris generation during a LOCA and subsequent ECCS suction strainer blockage. The supplement recommends Emergency Operating Procedure (EOP) changes and training to apprise operators of actions to be taken to minimize debris transport to the strainers, reduce debris deposition at the strainers, and to establish alternate injection sources in the event of strainer blockage. The bulletin supplement requires completion of these actions by May 19, 1994 (90 days from the date of the bulletin).

A report, Reference 1, was developed by the BWR Owners Group (BWROG) to address the bulletin supplement concerns. The specific guidance recommended by the NRC in the bulletin supplement for incorporation into Emergency Operating Procedures is not consistent with the current format of the procedures and is not recommended by the referenced report. The EOPs are intended to be symptom based as opposed to event based. As such, the plant symptoms for entry are not component based as in loss of pump suction pressure or loss of system flow. However, in the case of clogged ECCS strainers, a low vessel level or inadequate containment cooling would be indicative of inadequate ECCS flow, possibly caused by a clogging problem and would direct the operator into the applicable EOP flow chart to assure adequate core cooling and containment control is maintained. Procedural guidance already exists for the primary symptom indicative of strainer blockage, which is low reactor level, and for the establishment of alternate water sources (which would function independently of clogged strainers) in the event of continued vessel level decrease.

The following is the status of commitments that were made in Reference 2:

1) COMMITMENT:

Short-term awareness training (General Information Notice 94-21) on NRC Bulletin 93-02, Supplement 1 and the potential for ECCS suction strainer clogging will be provided to licensed operators, personnel qualified as Station Director, Operations Director, Technical Director, and Maintenance Director of the Generating Stations Emergency Plan (GSEP), and certain other engineering and maintenance support personnel by May 19, 1994.

June 17, 1994

STATUS:

The short-term awareness training to the stated individuals or groups was completed on May 18, 1994. This completes actions for Requested Action 1.

2) COMMITMENT:

A new LaSalle Operating Abnormal procedure (LOA-PC-06), Suppression Pool Suction Strainer Clogging, will be written. The procedure will provide potential symptoms of ECCS strainer clogging as well as actions that can be taken to reduce the clogging of the strainer. The procedure will be approved by May 19, 1994.

STATUS:

LOA-PC-06, "Suppression Pool Suction Strainer Clogging," dated May 6, 1994 was approved May 13, 1994. This procedure provides potential symptoms of ECCS strainer clogging as well as actions that can be taken to reduce the clogging of the strainer. This completes actions for procedure implementation for Requested Actions 2, 3.a, and 3.b.

3) COMMITMENT:

Licensed operators will receive awareness training on LOA-PC-06 by May 19, 1994.

STATUS:

Licensed operators received awareness training LOA-PC-06 by May 19, 1994. This completes actions for initial training on the Suppression Pool Suction Strainer Clogging, LOA-PC-06, as stated for Requested Action 2.

4) COMMITMENT:

Licensed operators will receive additional training on LOA-PC-06 during requalification module 4-94. This will be completed by July 29, 1994.

STATUS:

Licensed operator requalification module 4-94 includes additional training on LOA-PC-06 as stated. Requalification module 4-94 began June 6, 1994, and is scheduled to end on July 29, 1994.

5) COMMITMENT:

LaSalle simulator software personnel are developing a malfunction that will provide the capability of simulating a clogged ECCS suction strainer. The malfunction will be made available for simulator use by June 6, 1994 to enhance operator training.

STATUS:

The malfunction has been developed and made available for simulator use by June 6, 1994 for use in developing simulator drills and scenarios to enhance future operator training. This completes the action as stated in Requested Action 2.

6) COMMITMENT:

The Initial License Training program will be revised to include training on the suction strainer clogging phenomenon and actions related to LOA-PC-06. Analysis of the new task and related training materials are scheduled to be in place prior to the Abnormal/Emergency operations module of initial license training scheduled for April 1995.

STATUS:

This item is ongoing and will be completed prior to the Abnormal/Emergency operations module of initial license training scheduled for April 1995.

In addition to the above, LaSalle's Response to Requested Action 3.e stated, in part, the following:

- 1) "LaSalle Station is considering enhancements to the drywell closeout procedure, a thorough cleaning of the drywell floor on Unit 1 during the current refuel outage, quantifying the amount of sludge on the Unit 1 suppression pool floor during the current refuel outage, and filtering the suppression pool inventory prior to Unit 1 startup. Determination of actions to be taken in these areas will be made by May 19, 1994."

STATUS:

- a) LaSalle updated the drywell closeout procedure, LOP-DW-01, in early 1994 in response to NRC Bulletin 93-02 to specifically instruct Operating personnel to 'remove foreign material' - including 'loose or damaged insulation' and 'filters for containment ventilation main coolers and area coolers.' This criteria for cleanliness was defined to address the concern that 'fibrous material represents an ECCS suction strainer plugging concern.' This enhanced inspection criteria is in place to closeout the drywell during L1R06.

In early 1994, the LaSalle Administrative Procedure that controls work in (or near) the Suppression Pool, LAP-100-38, was revised to provide for a daily drywell floor housekeeping inspection by the Drywell Coordinator. This inspection is meant to identify loose material determined 'to have the potential for entering a downcomer opening,' and to provide for its immediate removal.

Engineering has recently come into possession of certain containment housekeeping and cleanliness standards used at other facilities. LaSalle shall evaluate the merits of this guidance, and revise the appropriate procedures prior to the LaSalle Unit 2 sixth refuel outage, L2R06, scheduled to begin in February 1995.

- b) As a result of recent industry experience as delineated in NRC Bulletin 93-02 and 93-02 Supplement 1, LaSalle has a heightened awareness of the safety significance of containment housekeeping and cleanliness. The industry has identified containment debris, including loose paint, to contribute to ECCS Suction Strainer Clogging during LOCA conditions. LaSalle performed both preventative and corrective work during L1R06 in direct response to this issue.

LaSalle has completed a thorough cleaning of the Unit 1 drywell floor during L1R06 as a result of walkdowns performed early in the outage. The intent of this floor cleaning was to remove debris, including loose paint, prior to startup. This cleanup effort was to remove those items that could be transported to the Suppression Pool via the drywell floor downcomers during a LOCA. Past practice included removal only of items that were accumulated over the duration of the outage (ie., nails, tape, wire, bolts, etc.).

- c) Two dives were made into the Unit 1 suppression pool as described in Reference 3. The sludge (silt) was determined by radiological and chemical analyses to be corrosion products with no organics as described in Reference 3. Based on the amount and content of the silt, LaSalle has determined that no further filtering of the suppression pool inventory was needed.

- 2) "Longer term considerations are being given to complete draining and cleaning of the Unit 1 and Unit 2 suppression pools in their next refuel outages."

STATUS:

LaSalle Station has considered the need (or merits of) draining the suppression pools during a refueling outage. On the basis of diver inspection and cleanup detailed in Reference 3, LaSalle believes that suppression pool cleanliness can be maintained to support full strainer capability without draining the suppression pools.

In Reference 3, LaSalle committed to define the long term actions with respect to the Unit 2 suppression pool in the station's final response to bulletin 93-02 supplement 1.

June 17, 1994

LaSalle Unit 2 has scheduled an inspection the two accessible ECCS suction strainers (accessible portions), which are located near suppression chamber access hatches, during a 7 day maintenance outage (L2M10) currently scheduled in July 1994. The results of this inspection will be evaluated to determine any subsequent actions needed during the maintenance outage or the Unit 2 sixth refuel outage, L2R06, schedule in early 1995.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other CECO employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

If you have any questions concerning this response, please refer them to me at (708) 663-7292.

Submitted,



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Generic Issues Administrator
Nuclear Regulatory Services

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