

Public Service  
Electric and Gas  
Company

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Rules and Procedures Branch  
Division of Rules and Records  
Office of Administration  
United States Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Mr. Robert M. Bernero, Director  
Division of BWR Licensing

Gentlemen:

COMMENTS ON DRAFT GENERIC LETTER ON IGSCC AND  
NUREG-0313, REVISION 2  
HOPE CREEK GENERATING STATION

On July 21, 1986, a notice of issuance appeared in the Federal Register indicating that public comments were being solicited on a draft of NUREG-0313, Revision 2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping," and the associated draft Generic Letter. To be assured of due consideration, comments were to be received by September 20, 1986.

In accordance with this provision, Public Service Electric and Gas Company (PSE&G) offers the following comments. Attachment 1 contains comments pertinent to both draft NUREG-0313 and the implementing Generic Letter. Attachment 2 contains comments applicable to draft NUREG-0313, Revision 2 only.

If you should have any questions in this regard, please do not hesitate to contact us.

Sincerely,



Attachments

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Mr. Robert E. Bernero

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C Mr. D. H. Wagner  
USNRC Licensing Project Manager

Mr. R. W. Borchardt  
USNRC Senior Resident Inspector

ATTACHMENT 1

The following comments are applicable to sections of both draft NUREG-0313, Revision 2 and the draft Generic Letter (except for comment #10). Each comment is preceded by the document and page number of the section it addresses. A slash (/) separates NUREG-0313 and the Generic Letter sections. Comment #10 is applicable to the draft Generic Letter only.

1. Generic Letter, pg. 2/NUREG-0313, Revision 2, pg. 2.2 (paragraph 2.1.1)

The "Staff Position on Materials" section states that materials considered resistant to sensitization and IGSCC in BWR piping systems are low carbon wrought austenitic stainless steels. This section and Table 1 of draft NUREG-0313 specifically list 304L, 304NG, 316L, 316NG, and 347NG as being acceptable. 304 and 316 stainless steels should also be listed with a footnote indicating that "with proper remedies applied these materials are acceptable."

2. Generic Letter, pg. 2/NUREG-0313, Revision 2, pg. 2.2 (paragraph 2.1.2)

The "Staff Position on Materials" section of the Generic Letter and NUREG state that carbon must be as specified in Table 1 "by both heat and product analyses." This statement should be changed to "by either ladle or product analysis." Either of these analyses are sufficient to verify the carbon content of steels.

3. Generic Letter, pg. 2/NUREG-0313, Revision 2, pg. 2.2 (paragraph 2.1.1)

Part (2) of "Staff Position on Materials" states that weld metal of type 308L grade with a minimum of 8% ferrite as deposited is considered resistant to sensitization and IGSCC. Other weld metals would also be acceptable with the above stipulation (i.e. 8% ferrite content). Examples are 316L and 309L. Ferrite content for welds is usually specified in terms of ferrite number (FN).

4. Generic Letter, pg. 2/NUREG-0313, Revision 2, pg. 2.2 (paragraph 2.1.1.)

Part (2) of the "Staff Position on Materials" section indicates that while type 308L grade weld metal may be used as a cladding on the inside of a pipe (as a corrosion-resistant cladding [CRC]), "this is not recommended generally, as the cladding may make volumetric inspections more difficult." It is PSE&G's position that this statement should be deleted. While the use of CRC does make volumetric inspections more difficult, this option should still be left open to licensees.

5. Generic Letter, pg. 2/NUREG-0313, Revision 2, pg. 2.3  
(paragraph 2.1.1)

Part (4) of the "Staff Position on Materials" section states that materials considered resistant to sensitization and IGSCC are "high toughness, low strength carbon steel grades, with a specified minimum yield strength of 35,000 psi or lower. PSE&G is not aware of any cases where carbon steel material has been shown to be susceptible to sensitization or IGSCC. Therefore, specifying strength requirements for carbon steel materials is unwarranted and should be deleted.

6. Generic Letter, pg.2/NUREG-0313, Revision 2, pg. 2.4  
(paragraph 2.2.1)

The "Staff Position on Processes" section states that "The processes considered to be fully qualified for providing resistance to IGSCC in new or replacement piping welds are the following." The phrase "new or replacement" infers that the staff requires that piping be replaced. This is not the case as stated in the Note for Recipients of Draft NUREG-0313 Revision No. 2 that was attached to these documents. The phrase "new and replacement" should be deleted, as it is misleading.

7. Generic Letter, pg. 3/NUREG-0313, Revision 2, pg. 2.6  
(paragraph 2.3.1)

Under the "Staff Position on Water Chemistry," the claim is made that "the successful development and application of Hydrogren Water Chemistry (HWC) is highly important and desirable to reduce the probability of IGSCC in components other than piping, particularly in structures and components inside the reactor vessel. "At this time there is insufficient evidence indicating that HWC inhibits IGSCC in reactor vessel internals to the same degree it inhibits IGSCC in piping during plant operation. It is PSE&G's contention that the second paragraph under the "Staff Position on Water Chemistry" should be deleted.

8. Generic Letter, pg. 4/NUREG-0313, Revision 2, pg. 6.1  
(paragraph 6.0)

Under "Staff Position on Leak Detection" in the draft Generic Letter and under the section entitled "Leak Detection" in draft NUREG-0313 the requirement is made that plant shutdown should be initiated when any leakage detection system indicates that 1) there is an increase in the rate of unidentified leakage in excess of 2 gpm or its equivalent within a 24 hour period, or, 2) the total unidentified leakage attains a rate of 5 gpm or its equivalent. These leak rate limits should be applicable as specified in plant Technical Specifications. A statement should be added indicating this.

9. Generic Letter, pg. 7/NUREG-0313, Revision 2, pgs. 5.5, 5.7 (paragraphs 5.3.2.3, 5.3.2.4, 5.3.2.5, and Table III)

Both the draft NUREG and Generic Letter require an augmented inspection for a range of weldment conditions (See Table I of the draft Generic Letter and Table II of the draft NUREG). These weld conditions are specified by Categories A through G. For weld categories C, D, and E an inspection period of 3 1/3 years is proposed. This inspection time increment makes outage scheduling more difficult in that an outage will have to be planned in 3 1/3 years increments solely for weld inspections (for a plant with these weld conditions). A more acceptable inspection requirement from a planning standpoint would be a schedule tied specifically to refueling outages. Therefore PSE&G proposes that the "3 1/3 years" increment should be replaced with "every second refueling outage or 4 years."

10. Generic Letter, pg. 5

The section entitled "Limits on Number of Cracked Weldments in Piping" proposes a limit on the number of weldments in a piping system that can contain cracks larger than those acceptable under ASME Boiler and Pressure Vessel Code Section XI, IWB-3500, with or without repairs. The proposed limit is 25% of the welds in a piping system. It is PSE&G's position that no limit should be specified. Any limits should be made on an individual plant basis with appropriate remedies applied. The limit should not be generic in nature.

## ATTACHMENT 2

The following comments are applicable to sections of draft NUREG-0313, Revision 2. Each comment is preceded by the page number of the section it addresses.

1. NUREG-0313, Revision 2, pg. 1.3 (paragraph 1.5)

The section entitled "Piping Replacement" states that "serious consideration should also be given to weld joint design, welding processes, and SI processes to provide residual stress improvement to the new piping." From the report it is unclear as to what is meant by "weld joint design" considerations. The meaning of this phrase should be clarified or the phrase deleted.

2. NUREG-0313, Revision 2, pg. 3.1 (paragraph 3.1.1)

Under "Weld Overlay Reinforcement," the statement is made that "Weld overlay is performed with cooling water flowing through the pipe during welding...." Weld overlay is not necessarily performed with cooling water flowing through the subject pipe. Therefore a more accurate statement would be "Weld overlay may be performed with cooling water flowing through the pipe during welding...."

3. NUREG-0313, Revision 2, pg. 4.3 (paragraph 4.4.2)

Under "Design Overlays" the statement is made that the thickness of the design overlay should be "at least two layers of weld metal after the surface has passed surface examination by penetrant inspection." A clarification should be made to show that the base material surface be examined by penetrant inspection, not the weld metal surface. The following modification to the above sentence would accomplish this. "The thickness of the designed overlay should be at least two layers of weld metal after the base material surface has passed examination by penetrant inspection."