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PATTERSON, D.W. Sulzer Bingham Pumps, Inc.

RECIP. NAME RECIPIENT AFFILIATION

NRC - No Detailed Affiliation Given

SUBJECT: Part 21 rept re pump supplied for auxiliary svc water duty at Oconee Nuclear Station. Problem centers around use of very high hardness AISI 440 A martensitic stainless steel shaft sleeves at center & throttle sleeve locations.

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SULZER PUMPS

Division of Sulzer Roteq

Sulzer Bingham Pumps Inc.
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To: U. S. Nuclear Regulatory Commission
Vendor Program Branch
Washington, D.C. 20555

Tel. (503) 226-5307
Fax (503) 226-5283

Date: 14 December 1998

Subject: Duke Energy Corp Auxiliary Service Water Pump SBPI's Serial Number 1A874

Dear Sir or Madam;

Per the requirements of 10CFR Part 21, Sulzer Bingham Pumps Inc. hereby advises of a "potential" condition that may be classified as a safety hazard or that could contribute to the exceeding of a safety limit, as defined in the technical specifications of a license for a nuclear plant on Sulzer Bingham pump supplied for auxiliary service water duty.

During the evaluation of a ASW pump temperature duty rerate qualification conducted by Art Washburn, Sr. Field Engineer of Sulzer Bingham Pumps Inc. Shreveport Service Center. This rerate qualification was conducted on subject pump at the request of Duke Energy Corporation on Purchase Order # ON26144. Sulzer Bingham Pumps Inc. discovered a potential defect in the pump that may affect its ability to perform a safety related function.

The problem centers around the use of very high hardness AISI 440 A martensitic stainless steel shaft sleeves at the center and throttle sleeve locations. This defect is similar to the one identified in May 1988 as being present in the Auxiliary Feedwater pumps installed in power plants. At the time it was felt that Sulzer Bingham Pumps Inc. reviewed all pumps in similar service and issued the appropriate notifications in accordance with 10CFR Part 21.

In the intervening eight years no failures have been reported to Sulzer Bingham Pumps Inc. for AFW or auxiliary service water duty. Most of the utilities have incorporated the revised Sulzer Bingham design for their AFW pumps.

During the current review, Sulzer Bingham Pumps Inc. reviewed all pumps for all aqueous services to assure that the stress corrosion cracking/hydrogen embrittlement could not occur in pumps we have supplied to the nuclear industry. All designs incorporating an interference fit sleeve were reviewed and the subject pump was the sole instance where the necessary criteria for stress corrosion cracking/hydrogen embrittlement could reasonably occur. Sulzer Pumps reviewed the shaft sleeve fit, material of construction and pumpage variables conducive to this mechanism. All other pumps either did not have the necessary interference fit or were constructed from non susceptible material.

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PDR ADDCK 05000269
S PDR

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JEOP
per K. Richards

Sulzer Bingham Pumps Inc. recognizes this defect could be environmentally induced by a stress corrosion cracking/hydrogen embrittlement mechanism directly affecting the AISI 440 wrought material supplied on the shaft sleeve. However, there is no conclusive evidence that this would cause failure of a pump. It is our opinion that this sleeve material should be replaced with AISI 410 (200-250 BHN) and bushing material be replaced with Ni-Resist Type 1 or 2. Since this pump has been in service for a number of years and not failed, we do not believe the material change out to be expedited.

The following is the identification of the subject pump supplied with this AISI 440 wrought material:

<u>Location</u>	<u>Quantity</u>	<u>Sulzer Serial Number</u>	<u>Size</u>	<u>Type</u>
Duke Energy Corporation Ocnee Nuclear Station Seneca, South Carolina	1	1A874	6 X 10 X 12 5 Stage	MSD-D

Simultaneously with this letter, Sulzer Bingham Pumps Inc. will advise Duke Energy Corporation of this potential condition and recommend Duke Energy Corporation evaluate their pump to environmental and operating conditions. Sulzer Bingham Pumps Inc. will advise Duke Energy Corporation of material correction specification.

Best regards,


David W. Patterson
Quality Manager

c: NRC File