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 JOHNSON, A.D. Region 5, Ofc of the Director

SUBJECT: Provides addl info necessary to close equipment qualification issues.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

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October 13, 1988
G02-88-215

Docket No. 50-397

Mr. A.D. Johnson, Enforcement Officer
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

Dear Mr. Johnson:

Subject: NUCLEAR PLANT NO. 2
ADDITIONAL INFORMATION EQUIPMENT QUALIFICATION

The attached provides a written summary of our position on the issues which were discussed during your site inspection. Because of the complexity of the issues, this written summary should help to clarify our position and prevent misunderstanding.

We trust that this will provide the information necessary to close these equipment qualification issues.

Should you have any further questions, please contact Mr. J.E. Rhoads at (509) 377-8548.

Very truly yours,



G. C. Sorensen, Manager
Regulatory Programs

GCS/bk

cc: NRC Document Control Desk
RB Samworth - NRC
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Potential Enforcement/Unresolved Item 1.

Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and section 5.0 of NUREG-0588 Category II, at the time of the inspection, Washington Public Power Supply System's installation of three Rosemount 1151 transmitters was not qualified because spare cable entrance hubs were not sealed.

Supply System Response To Unresolved Item 1.

The above unresolved item was directed at three transmitters, MS-PT-51B, CMS-LT-1 and CIA-PT-21A. All three transmitters perform only a Regulatory Guide 1.97 post accident monitoring safety function. The WNP-2 Operating License, at Attachment 2, Item 3 (a) requires:

The licensee shall implement (installation or upgrade) requirements of R.G. 1.97 Rev. 2 with the exception of flux monitoring prior to startup following the first refueling outage.

In March of 1985, the Supply System identified the list of equipment affected by the above license condition in our correspondence G02-85-152, dated March 21, 1985, G.C. Sorensen to A. Schwencer. The above equipment is listed in attachment 1 to that letter.

At the time of the inspection, the Supply System was performing its first refueling outage. The particular transmitters cited by the inspectors are Reg. Guide 1.97 instruments whose only safety function is to follow the course of an accident and thus were required to be qualified after the outage. The equipment was not required to be qualified at the time of the inspection. Therefore the November 30, 1985 deadline date is not applicable to the cited instruments. The date that qualification was required for the above instruments was prior to restart following the first refueling outage (July 1986). We stated to the auditors that they had selected a Reg. Guide 1.97 (CMS-LT-1) instrument for their audit and suggested that an alternate Rosemount transmitter candidate be chosen. These instruments could have been removed from the Master Equipment Qualification list prior to the 1986 audit and then placed back on prior to restart from the refueling outage. This information was previously provided to the NRC at the 1986 audit.

In addition, we provided information at the time of the audit and later in correspondence that clearly showed that the insertion of silicone foam into the entry hub of the transmitters sealed the transmitters and negated the need for any type of plug. Thus at the time of the inspection in 1986 the installed units were in a qualified configuration even though our license requirement did not call for qualification completion until restart following the first refueling outage (July 1986). We also attempted to show that the need for the steel plug, as called out in the vendor instructions and in the NRC's 1983 inspection findings, was primarily intended for applications that would experience the direct effects of a LOCA inside primary containment. The WNP-2 plant has no Rosemount transmitters inside primary containment. There are transmitters located in the secondary containment where the only steam break accidents stem from RCIC, RWCU, and Auxiliary Steam lines which have quick acting isolation features and thus produce only short term, moderate steam temperature and low pressure accident conditions.

Because the issue had not been resolved at the audit and was cited as a potential enforcement issue at the exit interview the Supply System elected to install steel plugs in the above instruments. Maintenance Work Request No. AU 535 documents completion of the installation of steel plugs including QC verification by May 19, 1986.

For all of the above reasons, the escalated enforcement provisions are not applicable. Please note that the Supply System has consistently disagreed with the NRC's findings on this issue and such disagreement is documented in our September 17, 1986 (G02-86-885) letter and in our January 20, 1988 (G02-88-023) letter which responded to the NRC's Inspection No. 50-397/86-12 report and the NRC's Notice of Violation respectively.

POTENTIAL ENFORCEMENT/UNRESOLVED ITEM 2

Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and section 5.0 of NUREG-0588 Category II, at the time of the inspection, WPPSS's files did not adequately document qualification of Limitorque operators because various internal parts and materials and installation features had not been identified and documented to be qualified. (Paragraph 4.D. (2), Item 50-397/86-12-2).

SUPPLY SYSTEM'S RESPONSE TO UNRESOLVED ITEM 2

The "various internal parts, materials, and installation features" identified in the 1986 audit consist of a mixture of those that may have an impact on qualification and those that are discretionary maintenance practice. The particular issues identified in the supplemental inspection of Oct. 6/7, 1988 are:

- A. "T" drains not installed in several units.
- B. Gear grease not sampled in two units and not identified in four units.
- C. Relief valves on the gear box had a shipping cover still in place. Note that the NRC did not cite this in their 1986 audit report but did state that the Supply System's NCR had identified that this condition existed.

Of these only the "T" drain issue is germane to qualification. Other concerns raised in the 1986 audit were addressed and resolved by the supplemental inspection of Oct 6/7, 1988 and will not be addressed here.

MOTOR HOUSING "T" DRAINS

Limatorque calls for "T" drains to be installed on motors of in-containment operators to insure pressure equalization and moisture drainage during LOCA exposure.

The Supply System documented that a deficiency existed through the NCR process (RHR-MO-9 was cited) prior to the 1986 audit. This NCR noted that the installed condition did not match the configuration of the tested operator used to establish qualification for WNP-2 in-containment operators (Rpt# 600376A). This information was provided to the NRC at the entrance meeting of the audit. The Supply System contends that even if the concern about "T" drains is regarded as a violation, a notice of violation should not be issued under the self-identification and correction provisions of 10 CFR 2, Appendix C, Section IV.

The Supply System did not know that this condition existed at WNP-2. We believed that "T" drains had been installed where required. The information provided in NRC notices about missing drain plugs in operators (IEN-83-2) was not specific to motors. The condition was also focused on a specific plant. Information received from Limatorque indicated that this was a unique condition and did not recommend any corrective action be taken as a result of the IEN. A later condition found at another plant also appeared to be plant specific.

The NRC had specifically audited our Limatorque qualification file and conducted plant walkdowns in February 1983 and found that installation and documentation was acceptable for all in-containment actuators including RHR-MO-9 (See NUREG 0892 Appendix C, page 3C-3&4). The NRC had issued the IEN in October 1983 and our SER indicating acceptable operators two months later in December 1983. The above IEN was formally reviewed and dispositioned in accordance with procedures in July 1985. The issue of motor "T" drains was specifically addressed and the disposition based on the judgement that the operators which required "T" drains included the hardware and instructions to require their installation. The "T" drains and installation instructions were shipped within the limit switch compartment. Limatorque did provide information in their 800058 qualification report section 8.0 that called for their installation in accordance with information provided on a Limatorque supplied tag on the operator. They did not state that the operators would not be qualified without them. It was reasonable given the above history to conclude on November 30, 1985 that "T" drains were installed in the Limatorque operators in-containment.

When IEN-86-03 was issued in January 1986, the Integrated Limitorque Qualification Program (ILQP) inspection plan was established because we began to doubt our earlier belief that Limitorque configuration problems were isolated concerns. This program was structured around detailed walkdown confirmation of the configuration of each operator.

This specific issue ("T" drains) was incorporated into the WNP-2 ILQP because we deemed it good practice to affirm our earlier assumptions (i.e. because instructions to install "T" drains were supplied with the operator, and there were no adverse NRC audit findings in February 1983). Our ILQP program uncovered the fact that contrary to our previous judgement (i.e. "T" drains were installed where required) some operators had them and some did not. Of the 8 operators in-containment 2 were correctly configured. Note that "T" drains are not required for Secondary Containment application because Limitorque conducted qualification tests without "T" drains for outside containment applications (Rpt # B0003). We found in our ILQP inspection that complete implementation as we had assumed did not occur.

Notwithstanding the test sample configuration versus as installed configuration issue, the "T" drains have not been shown to be critical to proper operation of the operator when subjected to high temperature steam exposure. There have been at least three steam tests where the drain ports were plugged and no "T" drain installed in the tested operator.

Limitorque test report B0003 exposed a Limitorque operator to 250 degrees saturated steam for 24 hours followed by an additional 14 days at 200 degrees successfully. The Limitorque operator did not have "T" drains in the motor housing. Likewise test reports 600198 and F-3271 were performed without "T" drains as part of the test sample configuration. In test 600198 the exposure included boric acid spray and temperatures of near 300 degrees were reached for several hours. The motor was still operable 7 days later with average steam temperature maintained around 230 degrees throughout. The F-3271 test was lower in temperature (210 degrees) and time (6 hours), but still affirms the ability of the motor to operate in a steam environment without "T" drains. We submit that the above demonstrates that "T" drains in Limitorque operators are not critical to operation in long term steam exposure conditions. We do not contend the configuration issue, but judge that it is a minor EQ concern. We are not aware of a failure of a motor operator to operate correctly in a qualification program because the motor housing "T" drains were not installed.

Our position is that we acted in good faith with reasonable and prudent effort to insure the configuration was correct prior to November 30, 1985. In addition, when configuration problems became known to us (i.e. IEN-86-03 January 1986), we acted promptly to address not only the specific issue of IEN-86-03 (unqualified internal wire) but included a thorough effort to deal with every known configuration issue or maintenance issue and to recheck previous conclusions to affirm their accuracy. Finally, we identified these problems to the NRC prior to conduct of their 1986 audit and took prompt action to correct all deficiencies found in the plant whether qualification or maintenance related, prior to restart from the refueling outage underway at the time.

LUBRICATION GREASE ISSUE

The lubrication issue stems from the identification in the NCR that incorrect lubricant type was discovered in the geared limit switch of the operator. The NRC inspection report generalized this and the details contained in the ILQP inspection data as "Gear grease not sampled in two or more units" and "not identified in four units" as a deficiency. The Supply System disagrees that this is a Qualification deficiency. The basis for the concern stems from an IEN-79-03 notice that describes a condition of hardening at a specific plant where continuous operation above 140 degrees F occurred. In May of 1979 Limatorque was contacted and responded by letter that the Beacon 325 grease that was described in the IEN was picked "to add safety factor to the design" and that its temperature range was from -65 to 250 degrees F. The letter also stated that the maintenance manual did not indicate that the grease is permanent and that periodic inspection was recommended as a means to determine when replacement was warranted. They also stated that "A temperature rating of 150 degrees F continuous operating ambient was placed on the Beacon 325 lubricant in order to achieve a maximum lubricant life for the device." In July 1978, 6 months earlier, the Supply System received an information letter from General Electric describing the hardening condition in environments above 140 degrees F and recommended a Mobil 28 which GE stated was "accepted by Limatorque as a replacement for Beacon 325".."and meets the same qualification parameters as Beacon 325".

No where, to our knowledge has the Beacon 325 grease been deemed "not qualified" for in-containment service. The lubrication manual supplied by Limatorque states that the geared limit switch should be lubricated with Beacon 325 and that Mobil 28 is an acceptable substitute. Limatorque lubrication data form LC8 recommends an inspection of the Geared limit switch every 36 months unless operating experience shows that a different interval is warranted. It also describes the Beacon 325 as a light gray in color.

The WNP-2 containment has not had a continuous service period above 150 degrees F. Average levels are nearer 130 degrees or below. During the ILQP inspection, samples of the grease were taken initially. They were reported to be gray in color and that no hardening as described in the IEN had occurred. Even though the 36 month period had not elapsed and the Beacon 325 grease was acceptable, the Supply System elected to replace the geared limit switch grease with the recommended Mobil 28. It was also decided, that after taking the first few samples in the hottest plant location (in-containment) and finding no problems, that continued sampling or analysis of the samples was meaningless. It was prudent maintenance practice to simply change out all in-containment geared limit switch grease with the Mobil 28 currently favored by Limitorque. Positive identification that the gray grease was Beacon 325 was not performed. We however, did not have any reason to believe that the grease found was anything other than that originally provided by Limitorque and treated this as a normal maintenance activity.

The reference in the NCR to incorrect grease was based on it not being the favored Mobil 28 which is reddish in color.

To summarize, the frequency of grease change out is based on surveillance and the initial frequency of 18 months for the main gear box and 36 months for the geared limit switch is recommended. The surveillance period may be adjusted (shortened or lengthened) depending on the surveillance results. The conditions cited in the the 1986 NCR and 1986 Audit report are not a qualification issue and should not be considered as part of various internal parts and materials that had not been identified and documented to be qualified.

GREASE RELIEF SHIPPING CAP LEFT IN PLACE ISSUE

The 1986 NCR that identified potential problems with the configuration of RHR-MO-9 also identified a new potential concern. The relief valve that was installed on the main gear box had a "plastic shipping cap installed". This cap as found inside containment at WNP-2 was a PVC shrink tube type cap. There is another type cap that was found in the warehouse that was a pop-in type, red in color. This latter cap, supplied by the relief valve manufacture, is installed in the relief valve when shipped to Limitorque.

The type cap found on RHR-MO-9 was the PVC shrink tube type. Limitorque replaces the pop-in type with a shrink tube type. The purpose of these caps is not only for shipping but to insure that during final painting at Limitorque no fouling of the relief valve occurs. The cap is not readily distinguishable because it is painted the same color as the operator. In addition, one of the final activities in completing construction of a nuclear plant containment is a final cleaning and coating program to reduce the contamination potential of equipment and structural surfaces. This cap also serves to prevent fouling of the relief valve during this final coating program.

No specific instructions are provided by Limitorque to require removal of this cap prior to operation. In fact, this cap is not identified on any detail drawings supplied by Limitorque. It is not addressed in maintenance manuals, qualification documentation, or in instructions packed with the operator (as was the case with the "T" drains).

Subsequent to our identification of this concern to the NRC, preceding the 1986 audit, other utilities have been cited for inadequate qualification documentation concerning this item. In other words, the Supply System was the first to discover and disclose this concern to the NRC, Limitorque, and the industry. Prior to November 30, 1985 we did not know of this concern nor should we have known.

Our corrective action was to remove the caps. We judged that the likelihood of these plastic caps causing delayed relief valve actuation and over pressurization (should an over pressure condition occur due to the high temperature occurring during a LOCA) to be remote. This is because the plastic would become soft at high temperatures and its ability to prevent relief valve actuation reduced. The cap may possibly impair relief valve actuation at low temperatures where it is hard and has a greater tensile strength, but no relief valve actuation would be needed at that level. Even at normal ambient levels the ability to allow a pressure build up through some unknown cause is small. For the above reasons we contend that modified enforcement action is not warranted for this condition.