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June 20, 1985
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Office of Nuclear Reactor Regulation
Attn: Mr. Hugh L. Thompson, Jr., Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Thompson:

Three Mile Island Nuclear Station Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
GPUN Response to Generic Letter 85-02

Generic Letter 85-02 dated April 17, 1985 requested plant specific information from all licensees for plants utilizing steam generators.

Attached is GPUN's response which addresses the staff recommended actions and review guidelines stemming from the NRC integrated program for the resolution of unresolved safety issues regarding steam generator tube integrity (Attachment 1) as requested. Our response concerning Category C-2 steam generator tube inspections will be provided by July 1985.

Sincerely,

H. D. Hukill
H. D. Hukill
Director, TMI-1

HDH/MRK/spb:0276A

cc: J. Thoma
R. Conte

Attachments

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GPUN RESPONSE TO NRC REQUEST FOR INFORMATION CONCERNING STAFF RECOMMENDED ACTIONS AND REVIEW GUIDELINES STEMMING FROM NRC INTEGRATED PROGRAM FOR THE RESOLUTION OF UNRESOLVED SAFETY ISSUES REGARDING STEAM GENERATOR TUBE INTEGRITY

1.a PREVENTION AND DETECTION OF LOOSE PARTS (INSPECTIONS)

Staff Recommended Action

Visual inspections should be performed on the steam generator secondary side in the vicinity of the tube sheet, both along the entire periphery of the tube bundle and along the tube lane, for purposes of identifying loose parts or foreign objects on the tubesheet, and external damage to peripheral tubes just above the tubesheet. An appropriate optical device should be used (e.g., mini-TV camera, fiber optics). Loose parts or foreign objects which are found should be removed from the steam generators. Tubes observed to have visual damage should be eddy current inspected and plugged if found to be defective.

These visual inspections should be performed: (1) for all steam generators at each plant at the next planned outage for eddy current testing, (2) after any secondary side modifications, or repairs, to steam generator internals, and (3) when eddy current indications are found in the free span portion of peripheral tubes, unless it has been established that the indication did not result from damage by a loose part or foreign object.

For PWR OL applicants, such inspections should be part of the pre-service inspection.

For steam generator models where certain segments of the peripheral region can be shown not to be accessible to an appropriate optical device, licensees and applicants should implement alternative actions to address these inaccessible areas, as appropriate.

Licensees should take appropriate precautions to minimize the potential for corrosion while the tube bundle is exposed to air. The presence of chemical species such as sulfur may aggravate this potential, and may make exposure to the atmosphere inadvisable until appropriate remedial measures are taken.

Reference

Section 2.1 of NUREG-0844.

GPUN Response

Background:

GPUN has reviewed the Staff Recommended Action and the history of inspections and secondary side maintenance on the TMI-1 Once Through

Steam Generators (OTSGs). While there has been extensive repair activity conducted on the primary side of the TMI-1 OTSGs, there have been only a few limited activities conducted within the secondary side of the OTSGs. These activities are summarized in the attached Table 1a. Review of this TMI-1 history produces the following conclusions:

a. Generally, most of the secondary side activities have been conducted through openings outside the shroud and above the main steam outlet piping. The significance of these locations is that if hypothetical loose objects had been lost through these openings, the OTSG design would trap them in the baffle just below the main steam piping outlet and their existence would not be detected by a lower tubesheet inspection; neither would their existence in these locations present the hazard of potential damage to peripheral tube locations which are on the other side of the cylindrical shroud.

b. Table 1a also shows that there have been no complicated maintenance activities performed inside the OTSG shell which would be likely to generate loose parts or material (such as the cutting of the downcomer resistance orifice plate as occurred at Ginna); no cutting operations which would produce significant material fragments or disassembly operations inside the secondary shell of TMI-1 OTSGs have ever been conducted.

c. The history of maintenance inside the OTSG secondary shell below the main steam outlet piping is wholly one of inserting and retrieving solid inspection, measuring, and sampling tools; all of these tools were removed intact from the OTSG by the same crews on the same shift on which they entered. During all of these operations, it was typical procedure and practice to: restore at least a temporary cover to the opening before leaving the opening unattended; carefully inspect all tooling to verify all component parts were securely captured; verify the tooling was intact on removal; and perform a supervisory or QC inspection prior to reinstallation of the permanent access closure.

d. It should also be noted that TMI-1 OTSGs differ from some B&W designs in regard to their external emergency feedwater header. Consequently, TMI-1 OTSGs do not have the potential for loose parts associated with the design of the internal EFW ring header piping nor the maintenance activities necessary to correct or convert it to an external piping design.

e. No abnormal conditions were noted prior to closure following the downcomer orifice plate gap measurement during the 1978 refueling outage. Although this inspection was not as thorough as recommended by NRC Generic Letter 85-02 in inspecting for peripheral tube damage, GPUN is confident that any gross abnormalities or the presence of foreign objects of appreciable size in those areas made accessible would have been observed. Additional confidence may be derived from the successful cycle of leak free OTSG operation following the 1978 refueling outage and the absence of ECT defect indications in the lower periphery of the OTSG tube bundle observed during the 1979 ECT inspection.

In addition to the review of TMI-1 OTSG maintenance history, GPUN has performed ECT inspections of 100% of the periphery of both OTSGs twice - once in 1982 and again in 1984. Both of these inspections were performed with the enhanced GPUN multifrequency ECT technique which includes use of the 0.540 differential probe and high gain as described in TDR-652. The most recent ECT inspection results have been provided to NRC in TDR-652 and TDR-666 by GPUN letter dated April 11, 1985 (5211-85-2073). TDR-652 reported only one ECT defect indication in 1984 (in OTSG A) in the first tube span above the lower tubesheet. All defective tubes have been plugged in accordance with Technical Specifications. Therefore, there is no compelling evidence to indicate a potential loose parts problem based on the comprehensive ECT inspection of the complete periphery of both OTSG tube bundles.

Conclusions:

(1) Based on our review of the TMI-1 OTSG design and history of operation, maintenance and inspection, GPUN concludes that there exists sufficient evidence establishing the absence of significant damage to the outer periphery tubes in the first free span above the lower tubesheet and that there is little or no reason to believe that loose parts are likely to be present there. GPUN further asserts that the chemistry risks associated with draining the OTSG secondary side completely, opening the lower secondary side handholes, and unavoidably introducing oxygen in the presence of sulfur or other local contaminants, as the NRC recommended inspection at the next ECT outage would require, are inadvisable.

    It is our assessment that very little or no additional certainty of the absence of loose parts or damage would be provided by such an inspection. It should be noted that only those peripheral tubes adjacent to cutouts in the lower shroud (cylindrical baffle) are readily accessible for inspection. Therefore, GPUN concludes that such a visual inspection during the next OTSG eddy current outage is not warranted.

(2) Visual inspections, limited to the accessible areas adjacent to areas affected by secondary side modifications or repairs, should be conducted as NRC has recommended. Therefore, suitable visual inspections commensurate with the potential for loose parts generation will be conducted following any future OTSG secondary side repairs or modifications.

(3) GPUN will evaluate eddy current indications found in the first free span above the lower tubesheet for peripheral tubes with both differential and absolute coil eddy current techniques. ECT inspection of adjacent tubes will be performed if there is reason to suspect damage by a loose part or foreign object.

GPUN considers that visual inspection of accessible peripheral tubes unavoidably introduces oxygen to a steam generator in a moist, drained condition. Therefore, visual inspections of accessible peripheral tubes will be conducted if (a) our evaluation of the ECT data and other information indicate that significant tube damage is likely and visual inspection is warranted, and (b) the benefits from such an inspection outweigh the risks of aggravating the corrosive nature of local secondary side chemical contaminants.

TABLE 1A

SUMMARY OF OTSG SECONDARY SIDE ACTIVITIES AT TMI-1

REFUELING OUTAGE DATE	ACTIVITY	STATUS	REMARKS
1978	Removed seven lower secondary (5") hand-hole covers to attempt repositioning of adjustable downcomer orifice plate.	Only tools to measure gap openings were introduced. Measurement data required re-evaluation and repositioning attempt was abandoned without disturbing orifice plate.	Gap measuring tool was removed intact. No other potentially loose parts producing operations were conducted and the orifice plate was left undisturbed with all its bolting locked in place. No loose parts or foreign objects were reported prior to closure. While this inspection was not intended as a complete inspection, it was plant practice to verify no loose parts would inadvertently remain following OTSG work in the OTSG areas made accessible.
1978 (and prior outages)	Inspect/modify EFW nozzles.	All nozzles were restored except for Z-axis shell opening which was blind flanged.	Nozzles were removed from the Reactor Building for inspection work. No loose parts producing work was conducted inside the OTSG shell. Temporary covers were in place except for actual nozzle installation/removal.
1979	Remove OTSG "A" lower secondary tubesheet sludge sample.	Tooling was not successful in reaching or retrieving any sludge.	Opening was only made for a few hours and all tooling was retrieved intact. No other work was done during this access period.

REFUELING OUTAGE DATE	ACTIVITY	STATUS	REMARKS
1980	Inspection of final main and emergency feedwater check valves (FW-V12A/B & EF-V12A/B).	All four valves internal parts were found to be intact and in good condition.	Only discrepancy noted on this inspection was the lock wires on FW-V12A/B; 3 of 4 wires were missing. They are not likely to cause peripheral tube damage even if they were able to pass through the 1/8" diameter holes in main feedwater nozzle spray plates.
1983	Connect vacuum pump to Z-axis EFW nozzle location for prekinetic expansion crevice drying.	Only connecting duct was installed through OTSG shell to shroud opening.	Duct was retrieved intact.
1983	Connect dehumidifier to upper secondary side handhole above MFW nozzle to minimize moisture condensation in upper tubesheet crevice during kinetic expansion.	Opening was only present for the minimum time necessary to install and remove ductwork connection.	Unit was test operated prior to connection to assure no debris would be blown into OTSG.

NOTE: There were also 3 rounds of tube sample removals (approximately 29 tubes) in 1982/1983 which created secondary openings from the upper primary tubesheet. These openings were either permanently plugged or temporarily plugged until permanent plugging could occur. The time period these tubesheet holes were open was minimized to only the time required for the tube sample removal itself and for the permanent plug installation. No loose material was known to have entered by these openings, nor would a lower tubesheet inspection, 15 support plates away, be expected to locate such material if it did exist.

1.b PREVENTION AND DETECTION OF LOOSE PARTS (QUALITY ASSURANCE)

Staff Recommended Action

Quality assurance/quality control procedures for steam generators should be reviewed and revised as necessary to ensure that an effective system exists to preclude introduction of foreign objects into either the primary or secondary side of the steam generator whenever it is opened (e.g., for maintenance, sludge lancing, repairs, inspection operations, modifications). As a minimum, such procedures should include: (1) detailed accountability procedures for all tools and equipment used during an operation, (2) appropriate controls on foreign objects such as eyeglasses and film badges, (3) cleanliness requirements, and (4) accountability procedures for components and parts removed from the internals of major components (e.g., reassembly of cut and removed components).

Reference

Section 2.1 of NUREG-0844.

GPUN Response

GPUN has reviewed Administrative Procedure (AP 1030, Rev. 7), "Control of Access to Primary System Openings" in comparison with the Staff Recommended Actions. This procedure applies loose parts and cleanliness administrative controls to both the OTSG primary and secondary side openings. The administrative controls provided by this procedure include:

a. Required notification of Operations Shift Supervisor/Foreman and Quality Assurance Department prior to opening an OTSG primary or secondary closure.

b. All items temporarily left inside OTSG primary or secondary opening are logged to allow tracking until closure of the opening.

c. Any items lost/dropped in the opening are required to be promptly reported to the Shift Supervisor/Foreman and investigated for proper corrective action.

d. All equipment used in, near, or over an OTSG primary or secondary opening is required to be inspected by the Job Foreman prior to use to ensure no loose parts can be generated.

e. The Job Foreman is required to inspect the opening immediately prior to closure to ensure all loose parts/debris are removed.

f. The time the opening exists is required to be minimized and temporary covers are required to be installed when practical and when no active work is in progress which utilizes the opening.

g. The Job Foreman is required to ensure that the cleanliness requirements of AP 1020 are met.

With the specific exception of requiring reassembly of cut and removed components, GPUN concludes that the existing Administrative procedure controls satisfy the NRC staff recommended actions. Therefore, a procedure revision to AP 1030 will be issued to specifically include a requirement for the reassembly of cut or removed components insofar as practical.

2.a INSERVICE INSPECTION PROGRAM (FULL LENGTH TUBE INSPECTION)

Staff Recommended Action

The Standard Technical Specifications (STS) and Regulatory Guide 1.83, Part C.2.f, currently define a U-tube inspection as meaning an inspection of the steam generator tube from the point of entry on the hot-leg side completely around the U-bend to the top support of the cold-leg side. The staff recommends that tube inspections should include an inspection of the entire length of the tube (tube end to tube end) including the hot-leg side, U-bend, and cold-leg side.

This recommended action does not mean that the hot-leg inspection sample and the cold-leg inspection sample should necessarily involve the same tubes. That is, it does not preclude making separate entries from the hot and cold-leg sides and selecting different tubes on the hot and cold-leg sides to meet the minimum sampling requirements for inspection.

Consistent with the current STS requirement, supplemental sample inspections (after the initial 3% sample) under this staff recommended action may be limited to a partial length inspection provided the inspection includes those portions of the tube length where degradation was found during initial sampling.

Reference

Section 2.2.2 of NUREG-0844.

GPUN Response

The staff recommended actions apply specifically to PWRs with U-tube type steam generators, and therefore are not applicable to the TMI-1 once through steam generators.

2.b INSERVICE INSPECTION PROGRAM (INSPECTION INTERVAL)

Staff Recommended Action

The maximum allowable time between eddy current inspections of an individual steam generator should be limited in a manner consistent with Section 4.4.5.3 of the Standard Technical Specifications, and in addition should not extend beyond 72 months.

Reference

Section 2.2.4 of NUREG-0844.

GPUN Response

The TMI-1 Technical Specifications (T.S. 4.19.3) specifies that if the results of two consecutive inspections for a given group of tubes encompassing not less than 18 calendar months fall into the C-1 category or demonstrate that previously observed degradation has not continued and no further degradation has occurred, the inspection interval for that group may be extended to a maximum of once per 40 months. Table 4.19-1, "Minimum Number of Steam Generators to be Inspected During Inservice Inspection" specifies that the Inservice Inspection may be limited to one steam generator on a rotating schedule if the results of the first and subsequent inspections indicate that both steam generators are performing in like manner. This could result in an interval of 80 months between required inspections on an individual steam generator. These specifications are in accordance with the current Babcock and Wilcox Standard Technical Specifications (NUREG-0103, Rev. 4).

GPUN considers that the staff recommended action limiting the maximum allowable time between eddy current inspections of an individual steam generator to 72 months has more meaning for a 3- or 4-loop plant than for a 2-loop plant such as TMI-1. While the maximum allowable interval of 80 months is not significantly different from the 72 month interval which is proposed, GPUN sees no basis for such a change, particularly since this inspection frequency would only be applicable when inspection results have been defect free.

3.a SECONDARY WATER CHEMISTRY PROGRAM

Staff Recommended Action

Licensees and applicants should have a secondary water chemistry program (SWCP) to minimize steam generator tube degradation.

The specific plant program should incorporate the secondary water chemistry guidelines in SGOG Special Report EPRI-NP-2704, "PWR Secondary Water Chemistry Guidelines," October 1982, and should address measures taken to minimize steam generator corrosion, including materials selection, chemistry limits, and control methods. In addition, the specific plant procedures should include progressively more stringent corrective actions for out-of-specification water chemistry conditions. These corrective actions should include power reductions and shutdowns, as appropriate, when excessively corrosive conditions exist. Specific functional individuals should be identified as having the responsibility/authority to interpret plant water chemistry information and initiate appropriate plant actions to adjust chemistry, as necessary.

The referenced SGOG guidelines above were prepared by the Steam Generator Owners Group Water Chemistry Guidelines Committee and represent and consensus opinion of a significant portion of the industry for state-of-the-art secondary water chemistry control.

Reference

Section 2.5 of NUREG-0844.

GPUN Response

TMI-1 Technical Specification Amendment No. 52, which became effective on April 20, 1980, incorporated into the body of the license the following license condition:

"(5) The Licensee shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

(a) Identification of a sampling schedule for the critical parameters and control points for these parameters;

(b) Identification of the procedures used to measure the values of the critical parameters;

(c) Identification of process sampling points;

(d) Procedure for the recording and management of data;

(e) Procedures defining corrective actions of off control point chemistry conditions; and

(f) A procedure identifying (1) the authority responsible for the interpretation of the data, and (2) the sequence and timing of administrative events required to initiate corrective action."

TMI-1 procedure AP 1046, "Secondary Water Chemistry Monitoring," ensures compliance with this license condition.

In 1982 as part of a larger program to upgrade the chemistry function at TMI-1, limits for water chemistry parameters were incorporated into a GPU Nuclear Specification (SP1101-28-002). The SGOG (EPRI-NP-2704) guidelines were used as part of the basis for the specification, as they were recognized to be based upon the best efforts of several utilities and to be used in conjunction with plant specifics to develop the individual plant limits. Therefore, GPUN specification SP1101-28-002 considered also the TMI-1 plant specific design, materials of construction and vendor recommendations.

With minor exceptions, the recommendations contained in the SGOG guidelines (EPRI-NP-2704; Rev. 1; June, 1984) have been adopted. These exceptions are as follows:

(a) Dissolved oxygen in feedwater during Hot Standby and Power Operations for which the limit is $\leq$ .007 ppm O_2 compared with the SGOG guideline limit of $\leq$ .005 ppm O_2.

(b) OTSG sodium during startup, heatup-cooldown, and hot shutdown conditions for which the limit is $\leq$ 2.0 ppm compared with the SGOG guideline limit of $\leq$ 1.0 ppm.

(c) pH, during wet layup conditions less than 200°F, for which the limits are that pH be in the range of (9.5-10.5) compared with the SGOG guideline limits which specify a range of (9.8-10.5).

(d) Hydrazine, during wet layup conditions less than 200°F, for which the limits are that hydrazine be in the range of (50-125) ppm compared with the SGOG guideline limits which specify a range of (75-200) ppm.

These exceptions are consistent with Babcock & Wilcox (BAW 1385), "Water Chemistry Manual for Duke-Type Plants."

In regard to materials selection, TMI-1 uses no copper alloy materials in secondary side heat exchangers or other components in contact with feedwater and would not plan on introducing these alloys into the system in the future.

Corrective actions as detailed in SP 1101-28-002 require power reductions, shutdowns, or other appropriate responses should the chemistry of the OTSGs or OTSG feedwater exceed the established limits. These specifications together with the level of management attention assured by the secondary water chemistry monitoring program will result in water chemistry that will not adversely affect the integrity of the steam generators.

3.b CONDENSER INSERVICE INSPECTION PROGRAM

Staff Recommended Action

Licensees should implement a condenser inservice inspection program. The program should be defined in plant specific safety-related procedures and include:

1. Procedures to implement a condenser inservice inspection program that will be initiated if condenser leakage is of such a magnitude that a power reduction corrective action is required more than once per three month period; and

2. Identification and location of leakage source(s), either water or air;

3. Methods of repair of leakage;

4. Methodology for determining the cause(s) of leakage;

5. A preventive maintenance program.

Reference

Section 2.6 of NUREG-0844.

GPUN Response

TMI-1's condenser tubes are fabricated from non-ammonia sensitive 304 stainless steel and are exposed to the relatively benign Susquehanna River water chemistry. The TMI-1 condensate system design incorporates full-flow condensate polishers. As a result, with the exception of a localized tube vibration problem in the bundle periphery experienced during the first cycle of operation, TMI-1's condenser operating history has been relatively free of tube leaks. Additional tube supports were installed and this problem has not recurred. Neither the TMI-1 condensers nor feedwater heaters contain copper.

Abnormal (Operating) Procedure 1203-5, "High Cation Conductivity in the Condensate and/or Feedwater System" is a plant-specific safety related procedure which restricts plant operation in the event of condenser tube leakage and requires that corrective action be taken. GPUN maintains that the limits of operation established by this procedure in conjunction with the limits of operation associated with secondary water chemistry are sufficient to address any nuclear safety related concerns pertaining to adverse effects of condenser tube leakage on OTSG tube integrity. Additional safety related procedures are not warranted.

GPUN subscribes to the Steam Generator Owners Group position that utilities should be allowed to establish the condenser inspection and maintenance programs best suited for their individual plants without NRC regulation in this area for the reasons that are stated in NUREG-0844. We believe that the past four cycles of TMI-1 operation demonstrate the integrity of our system design and operation and our commitment to successfully investigate the cause of condenser tube leakage and take appropriate corrective action.

GPUN is dedicated to the maintenance of primary and secondary water chemistry. Existing safety related procedures and Technical Specifications ensure that appropriate actions will be taken to preserve the integrity of the TMI-1 steam generators. However, GPUN believes that a condenser inservice inspection program for TMI-1 is a matter for economic consideration only and does not constitute a nuclear safety issue.

4. PRIMARY TO SECONDARY LEAKAGE LIMIT

Staff Recommended Action

All PWRs that have Technical Specifications limits for primary to secondary leakage rates which are less restrictive than the Standard Technical Specifications (STS) limits should implement the STS limits.

Reference

Section 2.8 of NUREG-0844.

GPUN Response

Babcock & Wilcox Standard Technical Specifications (NUREG-0103 Rev. 4) specifies a primary to secondary leakage limit of 1 gpm total through the steam generators and 500 gpd through the tubes of one steam generator.

TMI-1 Technical Specifications specify a 1 gpm total primary to secondary leakage limit through the steam generators, but do not include a limit for leakage through the tubes of one steam generator. The TMI-1 Operating License, however, includes a License Condition limiting leakage above a pre-established baseline leakage of 0.1 gpm (144 gpd) for both steam generators, which is considerably more restrictive than the 500 gpd per generator specified.

The TMI-1 limits for primary to secondary leakage are therefore equal to or below those of the Standard Technical Specification.

5. COOLANT IODINE ACTIVITY LIMIT

Staff Recommended Action

PWRs that have Technical Specifications limits and surveillances for coolant iodine activity that are less restrictive than the Standard Technical Specification (STS) should implement the STS limits. Those plants identified above that also have low head high pressure safety injection pumps should either: (1) implement iodine limits which are 20% of the STS values, or (2) implement reactor coolant pump trip criteria which will ensure that if off-site power is retained, no loss of forced reactor coolant system flow will occur for steam generator tube rupture events up to and including the design basis double-ended break of a single steam generator tube, and implement iodine limits consistent with the STS.

Reference

Section 2.9 of NUREG-0844.

GPUN Response

Technical Specification Amendment No. 108, which became effective on May 5, 1985, includes requirements for limiting the specific activity of the primary coolant to those values specified in Babcock and Wilcox Standard Technical Specification Section 3.49.

The discussion of recommendations for plants with low-head high pressure safety injection pumps does not apply to B&W plants, which have high head, high pressure safety injection pumps (makeup and purification system).

6. SAFETY INJECTION SIGNAL RESET

Staff Recommended Action

The control logic associated with the safety injection pump suction flow path should be reviewed and modified as necessary, by licensees, to minimize the loss of safety function associated with safety injection reset during an SGTR event. Automatic switchover of safety injection pump suction from the boric acid storage tanks (BAST) to the refueling water storage tanks should be evaluated with respect to whether the switchover should be made on the basis of low BAST level alone without consideration of the condition of the SI signal.

Reference

Section 2.11 of NUREG-0844.

GPUN Response

The NRC staff's concern regarding loss of safety function is a result of the control logic associated with the safety injection pump suction flow specific to the Ginna Plant stemming from the Ginna steam generator tube rupture event.

In light of NRC's recommendation, GPUN has reviewed details of the TMI-1 High Pressure Injection (HPI) System. TMI-1 does not have automatic switchover of HPI pumps from the makeup tank to the Borated Water Storage Tank (BWST) in case of a low level in the makeup tank. Ginna Plant uses a small capacity positive displacement pump for normal makeup and a high capacity pump for Safety Injection. TMI-1 differs with this arrangement, using the same pump for normal makeup as well as HPI. Makeup to the makeup tank would be supplied from the Reactor Coolant Bleed Tank manually upon actuation of the low level alarm.

The Reactor Coolant Bleed Tank will be used to supply makeup pump suction first, but if this source is exhausted or otherwise unavailable, the BWST can be manually lined up directly to provide suction for the HPI pumps. This sequence of makeup tank operation is incorporated into the alarm response procedure (F-2-1).

In the event of a reactor trip, manual action would provide HPI pump suction from the BWST per procedure ATP 1210-1. Upon an Engineered Safeguards (ES) signal, the HPI pumps automatically receive suction from the BWST.

Based upon the differences in plant design between TMI-1 and Ginna, as is evident from the above description of the HPI pump suction arrangement for TMI-1, the concern regarding safety injection signal reset is not applicable to TMI-1 and modifications are not needed.