THIRD PARTY REVIEW
OF THE
GRAND GULF NUCLEAR STATION
TECHNICAL SPECIFICATION REVIEW PROGRAM

Prepared for

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Prepared by

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1.0 PURPOSE AND SCOPE

Impell Corporation was requested by Senior MP&L Management to conduct a Third Party Review of the Grand Gulf Nuclear Station (GGNS) Technical Specification Review Program (TSRP). The need for the GGNS TSRP was identified by the Nuclear Regulatory Commission (NRC) in a letter from D. G. Eisenhut to J. B. Richard dated February 24, 1984. In response to that letter, Mississippi Power & Light Company (MP&L) organized a comprehensive review of the GGNS Technical Specifications to address the identified NRC concerns. As an additional confirming measure, MP&L concluded that an independent third party review would be appropriate. Impell Corporation was contracted for this purpose and commenced work on the Third Party review on March 16, 1984. The GGNS TSRP had already been initiated and a significant amount of work had already been accomplished.

The Impell charter was to provide MP&L Senior Management with an independent assessment of the effectiveness of the GGNS TSRP, including both the review process and the results. In assessing the adequacy of the results, Impell utilized two principal criteria: accuracy and completeness.

In conducting these reviews and assessments Impell prepared a plan which included:

- Procedural review
- Process reviews
- Process observations
- Personnel interviews
- TSRP documentation reviews
- As-built documentation reviews, and an
- Independent review of selected design features

In excess of 700 man-hours of Impell professional staff time were applied to this project.

2.0 INDEPENDENCE OF IMPELL PROJECT TEAM

To ensure the independence and credibility of the Third Party Review the Impell Project Team reported directly to the MP&L Senior Vice-President - Nuclear. In addition, the following measures were taken by MP&L and Impell to ensure independence and objectivity:

- Impell independently determined, defined, and implemented the work activities necessary to accomplish its charter.

- Impell team members had complete access to the personnel, records, and meetings of MP&L and other involved organizations.

- Staffing needs for the Impell team were completely at the discretion of the Impell Project Manager.

- All Impell team members were interviewed to ensure that they had no previous GGNS involvement.

Although Impell Corporation has performed several tasks for MP&L and currently have several personnel working in the MP&L Corporate and site locations, the Third Party Review team members had no previous project involvement with GGNS.

At the time that the Impell third party review commenced, it was recognized that the GGNS TSRP was in progress and that it would likely continue to be in progress while the third party review was being conducted. Accordingly, in the interest of ensuring the effectiveness of the GGNS TSRP, Impell recommended that any programmatic concerns identified during its review should be reported on a real-time basis to MP&L senior management. This concept was agreed to in advance. The programmatic recommendations developed by Impell are documented in Section 6.0 of this report.

Specific technical findings related to Impell's review of the results of the GGNS TSRP were not reported to MP&L until the TSRP technical review process had been completed [defined as following final disposition by the Review,

Prioritization, and Direction Group (RPD)]. This approach was taken to ensure the integrity of the independent assessment of TSRP results. These findings were supplied to MP&L, in accordance with a procedure developed specifically for that purpose (Appendix C), to ensure that they were evaluated and resolved.

3.0 IMPELL PROJECT TEAM QUALIFICATIONS

Based upon the diverse nature of this effort, Impell assembled a team of nuclear industry experts whose expertise and experience covered the full range of nuclear power plant design, engineering, construction, operations, and regulation with particular emphasis on previous experience with BWR Technology, Licensing and Operations. The individuals were selected from several of Impell's Regional Offices and represented an average of more than 12 man-years of nuclear experience.

Impell's Project Manager for this effort was Mr. John C. Guibert who is the company's Manager of Nuclear Safety and Licensing. Resumes for the members of the Impell Project Team are provided in Appendix A to this Report.

The Impell Third Party Review project organization chart is provided as Table 1. A summary listing of the qualifications of each team member is provided in Table 2.

Table 1

Impell Project Organization

Senior Vice-President
Nuclear

J. B. Richard

Impell Project Manager

J. C. Guibert

Impell Staff

D. Timmins
J. Skolds
E. H. Verdery
G. Weber
J. Ogawa
A. Miller
R. Machon
P. Cortland
D. Brosnan

Table 2

Summary Listing of Project Team Qualifications

NAME	INDEPENDENT DESIGN REVIEW/QA	OPERATIONS	LICENSING	REGULATION	TESTING	DESIGN	CONSTRUCTION	YEARS NUCLEAR-INDUSTRY EXPERIENCE
D. F. Brosnan	X		X			X		14
P. Cortland						X	X	9
J. C. Culbert	X	X	X	X				17
R. D. Machon		X			X			13
A. D. Miller					X	X		13
J. A. Ogawa			X		X	X		10
J. L. Skolds	X	X		X	X		X	12
D. C. Timmons	X	X	X		X	X	X	15
E. H. Verdery	X	X	X	X				17
G. Weber		X			X			9
						Total Experience		129

4.0 SPECIFIC WORK ACTIVITIES

The following is an a summary of the major Impell work activities performed during the Third Party review effort:

4.1 TSRP Procedure and Process Reviews

At the onset of the Third Party Review project, an assessment of MP&L's governing procedure (TS-1, Rev. 1) for the TSRP was conducted. This included interviews with all key participants responsible for implementing the program, real-time process observations through attendance at working meetings, and documentation reviews.

Based upon this procedural assessment, Impell concluded that the governing procedure was adequate and that it was being effectively implemented by participating organizations. A few potential programmatic weaknesses were identified and were communicated to MP&L senior management on a real-time basis. These recommendations are described in Section 6.0 of this report.

In addition to the above-mentioned procedural assessment, the third party review effort included more-detailed evaluations of the individual elements of the TSRP implementation process. Appendix B provides the general guidelines utilized by the third-party review team in performing these reviews.

- Specific reviews were conducted to evaluate the activities and results of the three principal groups conducting the first-level reviews (i.e., the ADMIN group which was responsible for TS Sections 1.0, 5.0, and 6.0; the RETS group responsible for all TS related to radioactive effluents and radiological environmental monitoring; and the NSSS/BOP group which was responsible for Section 2.0 and most of Sections 3.0 and 4.0 of the TS).

- Reviews were conducted of the documented results of the three groups providing principal input to the NSSS/BOP group (i.e., Bechtel Power Corporation, GE on-site at GGNS, and GE at San Jose). These reviews included: TSRP package reviews, interviews, and a visit to GE's San Jose office.

- A review was conducted of the activities and results of the Review, Prioritization, and Direction (RPD) group which was responsible for the final review of TSRP packages, disposition of program results, and prioritization of activities (i.e., TS changes) resulting from the TSRP. The review included documentation reviews, process observation, and interviews.

The observations and conclusions resulting from these process reviews are summarized in Section 5.0 of this report. Additional back-up information exists in Impell's project file for the Third Party Review project, and is available upon request.

4.2 Impell Independent Review of Selected Design Features

At the onset of the Third Party Review project, it was recognized that the TSRP was particularly well-constructed to ensure the accuracy of the GGNS Technical Specifications and to ensure that the level of detail of the GGNS Technical Specificaions was/would be* commensurate with current industry/NRC practice. It was also recognized that the TSRP was constructed in such a manner as to provide reasonable assurance that the GGNS Technical Specifications were/would be complete (note: in this context "complete" refers to inclusion, at an appropriate level of detail, of Technical Specifications related to design features, and associated parameters, which are unique to GGNS). To provide an additional level of confidence in its assessment of the "completeness" of the GGNS Technical Specifications, Impell performed an independent assessment of a representative sample of unique/plant-specific GGNS design features to verify that they were/would be appropriately reflected in the GGNS Technical Specifications.

Impell conducted an independent technical review of eleven design features that were either unique to the GGNS/BWR-6 design or which were judged to be potentially prone to Technical Specification omissions due to their complexity. A listing of these selected features is provided as Table 3. This assessment included a review of 17 TSRP packages.

The process through which this review was conducted is described below:

- The GGNS FSAR, SER and the existing GGNS TS were reviewed to obtain a preliminary overview of the TS coverage of parameters associated with the selected design features.

- Based upon this preliminary overview and the personal knowledge and familiarity of the reviewers with the most significant aspects of the selected design features, several aspects of each design feature were selected for detailed investigation.

- The detailed investigations included reviews of design documents, vendor manuals, industry standards, regulatory guidance documents, and pre-operational and surveillance test procedures. When appropriate, discussions were held with MP&L and Bechtel personnel to obtain additional information on specific design details.

- The reviewers extracted requirements, commitments, and design basis data from these documents and compared them to the current GGNS Technical Specifications and the results of the TSRP.

- The reviewers checked both for proper inclusion of requirements and for consistency of details between documents.

* The term "would be" is used to reflect the fact that the TSRP did identify necessary changes to the existing GGSN TS.

As indicated above, the review of the parameters associated with each design feature was not all-inclusive. The review approach focused on a substantive investigation of a number of specific attributes within each of the selected design features. Impell believes that this approach and scope of review were sufficient to allow reasonable conclusions to be reached relative to the completeness of the GGNS TS and the effectiveness of the TSRP in addressing the issue of completeness. Recognizing that this review would not be all-inclusive in scope, prior to initiating this review Impell recommended to MP&L that it would be prudent to confirm further the GGNS TS coverage of GGNS unique features (see Section 6.0). This recommendation was accepted by MP&L and such a confirmatory program has been initiated.

The observations and conclusions of this review are presented in Section 7.1 of this report. Additional back-up information exists in Impell's project files for the Third Party Review project and is available upon request.

4.3 As-Built Review

The Third Party Review included several activities related to an assessment of the extent to which the TSRP adequately addressed the as-built condition of the plant. These activities included: an assessment of the adequacy of the as-built "design input" (i.e., the drawings) used in the TSRP, an assessment of the extent to which this "design input" was actually utilized by the Lead Review Organizations, an assessment of the extent to which field verifications were performed by the Lead Review Organizations, and an independent assessment of the accuracy of selected parameters in the GGNS TS through procurement specification checks/field verifications.

These activities were carried out through personnel interviews, documentation reviews, and field verifications. The observations and conclusions resulting from this review are summarized in Section 7.4. Additional back-up information exists in Impell's project file for the Third Party Review project and is available upon request.

4.4 Documentation Reviews (TSRP Packages)

As part of the Third Party Review project, Impell reviewed approximately 115 of the Technical Specification packages that were developed during the GGNS TSRP. The majority of these packages related to Sections 3.0 and 4.0 of the GGNS Technical Specifications; however, all packages related to Sections 1.0 and 5.0 were reviewed and a representative sample of packages from Section 2.0 and 6.0 were also reviewed.

These reviews were conducted for a variety of purposes, including:

- Assessment of the completeness of the documentation for each package.

- Assessment of the extent to which the design basis documents were utilized in the package reviews/development (i.e., the depth of the review).

- Assessment of the extent to which operations personnel contributed to the package development/internal review.

- Assessment of the extent to which the BWR Standard Technical Specifications may have been inappropriately utilized in the review process.

- Assessment of the technical adequacy of the packages and their associated conclusions/recommendations.

The observations and conclusions of this review are presented in Sections 5.0, 7.3, and 7.5 of this report. Additional back-up information exists in Impell's project file for the Third Party Review project and is available upon request.

4.5 Personnel Qualifications Assessments

The Third Party Review project included several activities designed to assess the qualifications of personnel participating in the TSRP. These included personnel interviews, process observations, and resume reviews. The scope of this review included essentially all personnel participating in the TSRP. For personnel on-site at GGNS, personnel interviews were the principal source of information for this assessment and were augmented by process observations and resume reviews. For personnel off-site, resume reviews were generally utilized as the principal source of information and were often augmented by personnel interviews. In this regard, the qualification of GE personnel who performed their work off-site in San Jose were assessed during a visit to GE's San Jose offices.

Qualifications were assessed on the basis of the specific TSRP responsibilities assigned to each participating individual and the extent to which additional checks and balances existed (e.g., reviewer, checker, supervisory review).

The observations and conclusions of this review are summarized in Section 5.0 of this report. Additional back-up information exists in Impell's project file for the Third Party Review project and is available on request.

4.6 MP&L Quality Assurance Review

The Third Party Review included an assessment of the extent to which the MP&L Quality Assurance Program was applied to the TSRP and of the effectiveness of the QA participation.

This review included personnel interviews, process observations, and documentation reviews.

The observations and conclusions of this review are presented in Sections 5.0 and 7.6 of this report. Additional backup information exists in Impell's project files for the Third Party Review project and is available upon request.

4.7 MP&L TSRP Prioritization Process Review

Specific reviews were conducted to assess:

- The adequacy of the prioritization criteria utilized in the TSRP
- The uniformity and consistency of the application of the prioritization criteria
- The adequacy of the deliberative process through which priorities were assigned
- The adequacy of the results of the prioritization process

These reviews consisted of personnel interviews, process observation, documentation reviews, and independent assessments. The Third Party Review included (but was not limited to) a review of all Problem Sheets which were categorized by MP&L as being Priority Category 1 or 2.

The observations and conclusions resulting from this review are presented in Section 7.2 of this report. Additional back-up information exists in Impell's project file for the Third Party Review project, and is available upon request.

Table 3

Impell Third Party Review

Independent Review of Selected GGNS Design Features

List of Features Reviewed

Feature	Rationale
Drywell Purge System	Unique to BWR-6/Mark III Design
Hydrogen Ignition System	Unique to BWR-6/Mark III Design
Control Rods (Rod Control and Information System)	Unique to BWR-6 Design
Horizontal Fuel Transfer System	Unique to GGNS Design (for BWRs)
Crane Travel - Spent Fuel and Upper Containment Fuel Storage Pools	Unique to BWR-6/Mark III and Specific GGNS Design Details
Containment Spray	Iodine Removal Credit Not Common to BWR-5s
Standby Gas Treatment System	Influenced by Mark III Containment and Specific GGNS Design Details
Containment and Drywell Hydrogen Recombiner System	Influenced by Mark III Containment and Specific GGNS Design Details
Secondary Containment Integrity	Not Unique, But Influenced by Specific GGNS Design Details
Fire Suppression System	Strongly Influenced by Specific GGNS Design Details
D. C. Sources	Influenced by Specific GGNS Design Details

5.0 GENERAL PROGRAMMATIC OBSERVATIONS

- Personnel Qualifications were commensurate with specific areas of assigned responsibility. A few isolated exceptions were identified, however adequate checks and balances existed to preclude this from having a discernible impact on the effectiveness of the TSRP.

- Participation and influence of plant personnel, including licensed operations personnel, was appropriate and effective. This was particularly the case at the two critical points in the TSRP process: the NSSS/BOP group reviews and the RPD group reviews.

- MP&L Quality Assurance was actively involved and performed thorough reviews. (See section 7.6 for additional information).

- Depth of review by LROs was generally very good; documented linkage back to FSAR supporting documents and other relevant design documents exists.

- Level of documentation was generally very good.

- The thresnold for identification of "problem sheets" was low; the process was thorough.

- Potential over-reliance on Standard Technical Specifications; minor, if any, impact on quality of the program and its results. (See Section 7.3 for additional information).

- Several discrepancies of minor, if any, safety-significance were identified. The TSRP process was through, but not perfect.

- Resource dedication reflected management commitment to a thorough, quality job.

- Strong MP&L management involvement and attention was evident.

- Programmatic enhancement activities were implemented as work progressed.

- Cooperation and openness of all participants reflected their confidence in the effectiveness of the TSRP.

6.0 PROGRAMMATIC RECOMMENDATIONS AND RESPONSE

As the Third Party Review progressed, a number of potential concerns related to the effectiveness of the GGNS TSRP were identified by Impell and were promptly communicated to MP&L's Senior Vice-President - Nuclear, along with specific recommendations. In all cases, MP&L accepted these recommendations and initiated appropriate actions. These recommendations were:

- MP&L Quality Assurance should perform audits of the work process for work performed off-site by LROs (i.e., Bechtel Power Corporation at Gaithersburg and General Electric at San Jose).

  (Recommendation accepted: audits have been conducted)

- MP&L should consider performing a discrete review of GGNS/BWR-6 Mark III unique design features to further confirm the results of the TSRP.

  (Recommendation accepted: program has been initiated)

- MP&L Management should reinforce its commitment to a quality job, even at the expense of the TSRP schedule. (This recommendation was presented at the time that it became apparent that the RPD group was overloaded with work.)

  (Recommendation accepted: original RPD schedule slipped a week)

- MP&L should ensure that there is appropriate feedback from RPD to LROs on disposition of their input, with sufficient opportunity for feedback.

  (Recommendation accepted and implemented)

- MP&L Plant Management should review Priority Two Technical Specification Problem Sheets and determine where Administrative Controls will be necessary or appropriate during the interim period while Technical Specification changes are being processed.

  (Recommendation accepted and being implemented)

7.0 SPECIFIC OBSERVATIONS

7.1 Independent Assessment of Selected GGNS Design Features

As a result of this review, several minor discrepancies were identified. None of these were classified as Findings.* Only one of these items (identified as O-4 in Table 4) is related to the potential need for the addition of a Technical Specification requirement for a unique GGNS/BWR-6 design feature. This item is judged to be of minor safety significance. Based on this review, including the nature of the discrepancies identified, Impell did not identify any programmatic concerns related to the completeness of the GGNS T.S.

Based on this assessment, Impell has determined that:

- The GGNS/BWR-6 unique design features reviewed by Impell have been addressed in the GGNS Technical Specifications.
- The level of detail in the GGNS Technical Specification is influenced by the STS; this is to be expected.
- It would be prudent to perform an expanded review of the GGNS/BWR-6 MK III unique design features to further confirm the results of the TSRP.

7.2 TSRP Problem Sheet Prioritization Process

Based upon its review of the TSRP prioritization process, Impell has determined that:

- The prioritization criteria were appropriate; however, it should be noted that there is a wide range of safety-significance within the subcategories of category 2.

* Definitions are provided in Table 4

- The prioritization criteria were applied in a uniform and consistent manner.

- The prioritization criteria were applied in a conservative manner. Based on Impell's independent assessment, no Priority Category 2 items were identified that should have been categorized as Category 1. In Impell's judgement, several of the Priority Category 1 items could have been categorized as Category 2 and a number of the Category 2 items could have been assigned lower sub-category designations.

- The personnel participating in the prioritization process were well-qualified.

- The extent of evaluation/deliberation which went into the prioritization process was very good.

Partially as a result of this review, Impell provided a programmatic recommendation to MP&L regarding the interim use of Administrative Controls for certain Priority Category 2 items. (See Section 6.0).

7.3 Potential Over-Reliance on the STS

Based upon its review, of TSRP documentation packages and personnel interviews Impell has determined that:

- No evidence was found that the STS were used as the only basis for deleting an existing GGNS Technical Specification.

- Only one instance was found in which the STS may have been the sole basis for rejecting a proposed addition to the GGNS Technical Specification (this item is still under consideration).

- The LRO reviews included a check for consistency with the STS, but were not limited to such a check.

- The level of detail of individual Technical Specifications within the GGNS Technical Specifications is influenced by the STS. This is to be expected, in that the STS represent current NRC guidance and industry practice with respect to Technical Specification level of detail.

- The GGNS Technical Specifications include requirements which exceed the level of detail in the STS.

7.4 As-Built Review

Based upon its review, Impell has determined that:

- The as-built data provided to the LROs was up-to-date and was appropriately controlled.

- The LROs utilized the as-built data and supporting lower-tier documents in their reviews.

- The TSRP documentation packages provide evidence that the as-built data and field verifications identified a number of inconsistencies between the GGNS T.S. and the as-built plant.

- Impell's limited procurement specification checks/field verifications support the fact that the as-built data was used in the TSRP.

7.5 TSRP Documentation Packages

As indicated in Section 5.0 of this report, Impell's third party review of approximately 115 TSRP documentation packages resulted in the determination that:

- The level of documentation in the TSRP was generally very good.

- The depth of the review by the LROs was generally very good. Documented linkage back to the FSAR, FSAR supporting documented, and other relevant design documents exists.

- Participation and influence of plant personnel, including licensed operations personnel, was appropriate and effective.

- (Potential over-reliance on the BWR STS is discussed in Section 7.3)

Based upon these TSRP documentation package reviews, Impell identified several minor discrepancies. These are presented in Table 4 and can be summarized as follows:

0 Preliminary Findings
8 Preliminary Observations
5 Preliminary Deviations

These discrepancies were identified to MP&L in accordance with the Impell Notification Procedure (Appendix C). Copies of the Impell Notification Sheets for each of these discrepancies are provided in Appendix D.

MP&L's response to the above-mentioned preliminary observations and deviations are documented on the Notification Sheets in Appendix D. Based upon Impell's evaluation of MP&L's responses, the final categorization of these items is as follows:

0 Findings
5 Valid Observations
5 Valid Deviations*

* One preliminary observation was downgraded to a valid deviation. Two preliminary observations were deleted and one preliminary deviation was deleted.

It should be noted that, pending the outcome of the additional MP&L review of several of the items classified as Valid Observations, several of these items could be reclassified either as Valid Deviations or deleted from the classification system.

In all cases, Impell has determined that MP&L's planned path for resolving these items is satisfactory. All of these items are judged to be of minor, if any, safety significance.

7.6 MP&L Quality Assurance Review

Based upon its review, Impell has determined that:

- The MP&L QA review of the TSRP was substantive. Approximately 23.5% of the TSRP documentation packages were reviewed by QA. In addition, MP&L QA conducted audits of the two organizations that performed work off-site (i.e., Bechtel Power Corporation in Gaithersburg and General Electric in San Jose).

- The MP&L QA review was proceduralized. An audit plan and audit checklists were developed and utilized.

- The MP&L QA review was thorough. It was conducted using a "zero-defect" philosophy. A number of undiscovered inconsistencies between the GGNS TS and related documents were discovered by QA. Although technical review of these inconsistencies concluded that they represented minor, if any, sig icance, the thoroughness of the QA audits and the contribution of the QA effort to the assurance of TSRP effectiveness was evident.

Table 4

Listing of Preliminary Observations and Deviations

Impell Item No.	Technical Specification Section	Title	Problem Description
Observations[1]			
0-1	3/4.1.3.3	Control Rod Scram Accumulators	FSAR Requires Accumulator Level Check
0-2	3/4.6.6.3	Secondary Containment Integrity	Minor TS discrepancy (CFM vs SCFM air flow units)
0-3	3/4.6.6.3	Secondary Containment Integrity	Air flow distribution test not included
0-4	3/4.6.7.2	Hydrogen Ignition System	No surveillance test for seal box and hood spray shield
0-5	3/4.6.7.3	Drywell Purge	Minor TS discrepancy (CFM vs. SCFM air flow units)
0-6	3/4.8.2.1	DC Power Sources	TS does not comply with Reg. Guide 1.32
0-7	3/4.8.2.1	DC Power Sources	Performance test within first two years of service not included in TS
0-8	3/4.8.2.1	DC Power Sources	Conflict in annual capacity tests

Table 4
(Continued)

Listing of Preliminary Observations and Deviations

Impell Item No.	Technical Specification Section	Title	Problem Description
Observations[1]			
D-1	3/4.1.3	Control Rod Operability	FSAR discrepancy in fuel assembly weight
D-2	3/4.6.3.2	Containment Spray	Apparent FSAR error in assumption of containment spray flow rate
D-3	3/4.6.6.3	Secondary Containment Integrity	FSAR references diff. Reg. Guide 1.52 revision than TS
D-4	3/4.6.6.3	Secondary Containment Integrity	SGTS Long-Term flow discrepancy between FSAR and TS
D-5	3/4.6.6.3	Secondary Containment Integrity	FSAR/SER discrepancy on time for SGTS to reach proper flow rate

Notes: 1 - The following classification definitions were used by Impell in this review:

Finding - The need for a Technical Specification change has been determined by Impell to meet the criteria of MP&L's priority category 1A, B, or C and was not identified at the completion of the GGNS TSRP technical review [defined as following disposition by the Review, Prioritization, and Direction Group (RPD)].

Observation - Same as definition for a finding except that it meets the criteria of MP&L's priority category 2, A - I.

Deviation - Actual or potential need for an FSAR revision which was not identified at the completion of RPD review.

8.0 CONCLUSIONS

Assuming that the TSRP is carried out to fruition as presently constructed, Impell concludes:

- That the TSRP process and results provide adequate assurance that the GGNS Technical Specification, as revised to reflect the results of this program, accurately reflect the GGNS design analyses and tne as-built plant. While the possibility remains that undiscovered discrepancies may still exist, it is unlikely that such discrepancies would be of substantial safety significance.

- That the TSRP process and results provide adequate assurance that the GGNS Technical Specifications, as revised to reflect the results of this program, appropriately reflect the unique design features of GGNS. Impell believes that it would be prudent to confirm further the Technical Specification coverage of GGNS unique features: MP&L has initiated such a confirmatory program.

- That the TSRP process and results provide adequate assurance that the GGNS Technical Specification, as revised to reflect the results of this program, meet or exceed current NRC/Industry Standard for the level of detail to be included in Technical Specifications.

- That the GGNS Technical Specifications, as revised to reflect the results of this program, will be adequate to ensure safe operation of the plant.

APPENDIX A

Resumes of Impell Third Party Review Project Team

D. F. Brosnan

P. Cortland

J. C. Guibert - Project Manager

R. D. Machon

A. D. Miller

J.A. Ogawa

J. L. Skolds

D. C. Timmins

E. H. Verdery

G. A. Weber

DANIEL F. BROSNAN

EDUCATION

B.S., Electrical Engineering, University of Notre Dame, 1964

M.S., Electrical Engineering, University of Southern California, 1971

Professional Certificate in Engineering Management, University of California, Los Angeles, 1974

PROFESSIONAL EXPERIENCE

Mr. Brosnan has over nineteen years of experience in the design, licensing and project management of large commercial power generating facilities. The majority of his design experience has dealt with the electrical design and retrofit of power plants including high voltage switchracks, auxiliary power systems and emergency power supplies. He has experience in the design and installation of transformers, switchgear, motor control centers, bus and cable. He has prepared equipment layouts, electrical one line and schematic wiring diagrams, relay protection schemes, conduit and cable schedules, procurement specifications, cost estimates and systems descriptions.

He has developed and modified computer programs for transmission systems, auxiliary power systems and construction schedules. Transmission system studies include losses, compensation and grid stability analysis. Auxiliary power system studies include short circuit analysis and load flow studies for normal load, large motor starting, low grid voltage and emergency generator loading conditions. In addition, he has developed and applied critical path method scheduling and cost control programs for design, procurement and construction-erection of power plants including electrical systems.

Mr. Brosnan has been involved in electrical and seismic testing of equipment. He has prepared a comprehensive equipment qualification program for plant electrical equipment. This program included equipment qualification plans, implementing procedures, review of vendor qualification plans and preparation of licensing submittals. The plans and procedures included documentation requirements, files

PROFESSIONAL EXPERIENCE (Continued)

and interfaces. He also has been responsible for the review and updating of instrument and control drawings and licensing documents for a major equipment supplier.

Mr. Brosnan has extensive experience in both federal and state licensing processes for power plants. While working for a major utility in their project office, Mr. Brosnan was responsible for the preparation of the project feasibility study report and the Environmental Impact Report. As chairman of the Project Engineering Committee he directed project engineering, scheduling, budgeting and cost control for a proposed four unit power plant. He has been a chairman and member of numerous joint utility/industry groups to develop industry positions on critical power plant issues. He has prepared licensing testimony for federal, state and local hearings.

He is nationally recognized in electrical standards development by his participation in the IEEE Power Engineering Society's Nuclear Power Engineering Committee.

For three years Mr. Brosnan was manager of our Systems Engineering Division. He was responsible for systems analysis, plant performance and plant engineering. His responsibility included management of electrical and instrumentation and controls engineers in analysis, design and engineering.

As manager of the Project Management Division for one year, he was responsible for the overall management, administration and control services for over $25 million of engineering design, analysis and field construction liason services. Project Management services include planning and scheduling, interdisciplinary coordination, estimating, cost and status reporting, vendor evaluations and licensing testimony.

He is presently manager of the Management Services Division with responsibilities for plant operations and maintenance support, emergency preparedness, training and information management systems.

PROFESSIONAL AFFILIATIONS

Tau Beta Pi, National Engineering Honor Society

Eta Kappa Nu, National Electrical Engineering Honor Society

Institute of Electrical and Electronics Engineers

Institute of Electrical and Electronic Engineers, Nuclear Power Engineering Committee

REGISTRATIONS AND LICENSES

Electrical Engineer, State of California, Registration No. E-7161

Nuclear Engineer, State of California, Registration No. NU-1549

PUBLICATIONS AND PRESENTATIONS

"Effect of the February 9, 1971, San Fernando Earthquake on Power System Equipment," invited paper, presented at the American Power Conference, April, 1972

"Professional Societies and Nuclear Safety," invited panel member at Joint ANS, ASCE, ASME, IEEE Meeting, March, 1972

"Relative Spent Fuel Storage Hazard," D. F. Brosnan, J. F. Strahl, and E. N. Cramer, presented at American Nuclear Society, Winter Meeting, 1977

PAUL CORTLAND

EDUCATION

B.S., Mechanical Engineering, New York University

Graduate Studies in Welding Engineering, Ohio State University

MBA, Xavier University

PROFESSIONAL EXPERIENCE

Mr. Cortland has over 20 years of experience in nuclear, fossil and industrial operations, procurement, maintenance and welding. This experience includes supervision of maintenance and construction engineers and crafts during plant outages. He has been actively involved in inspection and procedure development for nuclear construction and maintenance and has trained utility operators and engineers.

An ongoing responsibility is the preparation and monitoring of procurement and materials specifications for imported materials. This work involves knowledge of import restrictions and coordination of the supply of parts for installation at a nuclear power plant.

A recent responsibility was to perform a third party review of repair work in order to determine the causes and evaluate the hours charged. This review was prepared under the work product doctrine for future use.

Mr. Cortland has had broad involvement in nuclear power plants and has developed and performed the site coordination for maintenance programs and procedures. He has prepared responses to corrective actions, non-conformance reports and quality audits. Paul has developed training programs and performed the actual training. He has been an inspector on nuclear plant construction and has supervised crafts in nuclear plant construction and maintenance.

Working as a Site Facilities Coordinator required the managing, planning and scheduling of the support services and materials prior to and during an extended nuclear plant outage. This included interfacing with plant operations and construction personnel in order to effectively schedule plant manpower support during the outage.

PROFESSIONAL EXPERIENCE (Continued)

As the Warehouse Supervisor at an operating nuclear plant he managed 23 staff and craft personnel and wrote purchasing requisitions, selected vendors and reviewed purchasing documents for nuclear quality requirements. Operating the warehouse involved scheduling support, writing warehouse procedures and integrating materials management into the overall outage schedule.

As a Lead Senior Engineer, Mr. Cortland provides engineering assistance and project field supervision and coordination for Impell clients. In this capacity he is responsible for developing and implementing administrative and technical procedures as well as planning and scheduling site activities.

Mr. Cortland has extensive experience in welding. He has been responsible for developing technology, writing procedures, training people, and field applications for welding, brazing, and heat treating. He has personally directed 14 engineers and controlled the selection of procedures for welders and fitters engaged in manufacturing nuclear and fossil equipment for public utilities. This work involved replacement analysis and capital planning.

PROFESSIONAL AFFILIATIONS

American Welding Society

American Electroplating Society

REGISTRATIONS AND LICENSES

Professional Engineer, State of Ohio

Professional Engineer, State of Iowa

Certified Welding Inspector, American Welding Society

COMMITTEES

American Welding Society,
D1.1 Structural Welding Committee

PATENTS

U.S. Patent 3,542,995 Electron Beam Welding

JOHN C. GUIBERT

EDUCATION

B.S., Nuclear Science, 1967, US Naval Academy, Annapolis, Maryland

M.S., Nuclear Engineering, 1968, Catholic University, Washington, D.C.

Graduate Studies in Business Administration, 1980-81, George Washington University, Washington, D.C.

PROFESSIONAL EXPERIENCE

Mr. Guibert is Impell's Manager of Nuclear Safety and Licensing. In this capacity, he is responsible for directing and participating in activities associated with providing personal consulting and programmatic services related to nuclear power plant licensing and safety assessment.

Prior to assuming his current position, Mr. Guibert was Manager of the Systems Engineering Division in Impell's Western Region. In that capacity, he was responsible for the management and technical direction of activities associated with providing engineering services in the areas of systems analysis, systems design, computer systems applications, thermal-hydraulic analysis, plant performance, and probabilistic risk assessment.

Mr. Guibert's experience prior to joining Impell includes six years with the Nuclear Regulatory Commission and seven years as an officer in the U.S. Navy Nuclear Power Program.

During his career with the NRC, Mr. Guibert obtained extensive experience and knowledge of nuclear regulatory and licensing practices and policies while serving in a variety of positions of increasing responsibility. His assignments included: Project Manager in the Division of Operating Reactors, Office of Nuclear Reactor Regulation; Technical Assistant to the Assistant Director for Operational Technology, Division of Operating Reactors, Office of Nuclear Reactor Regulation; Technical Assistant

PROFESSIONAL EXPERIENCE (Continued)

to Commissioner Richard T. Kennedy; Assistant Director for Radiological Health and Safeguards Standards, Office of Standards Development; Deputy Director, Division of Health, Siting and Waste Management, Office of Nuclear Regulatory Research.

As a Project Manager in the NRC's Division of Operating Reactors, Mr. Guibert was responsible for coordination of all phases of review of licensing actions affecting several BWR nuclear power plants; technical review of safety-related licensing actions; and preparation of safety evaluations. In addition, he served as the NRC's Program Manager for the generic reevaluation of the BWR Mark I Containment System. As Technical Assistant in the Division of Operating Reactors, Mr. Guibert was responsible for technical coordination of activities related to operating nuclear power plants; development of policies, programs, procedures, and technical positions related to the regulation of operating nuclear power plants; review of reactor operating experience; and preparation of technical reports on generic safety issues. In addition, he served as the Division of Operating Reactor's representative in the development and implementation of the Office of Nuclear Reactor Regulation's Generic Technical Safety Issues Program.

As Technical Assistant to Commissioner Kennedy, Mr. Guibert was responsible for providing expert technical and policy advice in connection with the formulation, implementation, and evaluation of NRC policies, plans, and programs. In this capacity, he developed recommendations for establishing or modifying NRC policies and programs and for the resolution of controversial aspects of NRC staff policy and program proposals. As Assistant Director for Radiological Health and Safeguards, Mr. Guibert planned and directed the NRC's program for the development of regulations, regulatory guides, criteria, and standards for radiological health and safeguards matters. In this capacity, he provided technical and managerial direction

PROFESSIONAL EXPERIENCE (Continued)

to the Radiological Health Standards Branch, the Occupational Health Standards Branch, and the Safeguards Standards Branch. In addition, Mr. Guibert served as the Chairman of the NRC's Task Force for the comprehensive revision of 10 CFR Part 20 and as the NRC's representative on the U.S. Radiation Policy Council's Working Group. As Deputy Director of the Division of Health, Siting, and Waste Management, Mr. Guibert was responsible for the formulation, implementation, and evaluation of the NRC's program for research and standards development in the areas of radiological health, nuclear facility siting, and radioactive waste management.

During his naval career, Mr. Guibert qualified as Engineering Officer of the Watch on two pressurized water reactor plants and was certified as Engineer Officer of Naval Nuclear Propulsion Plants. He served as an Engineering Department Division Officer and as Radiation Protection Officer on an operational nuclear powered submarine, as a member of Submarine Flotilla Six's Operational Readiness Evaluation Team, and as a Department Director at a major naval submarine training center.

PROFESSIONAL AFFILIATIONS

Atomic Energy Commission Fellowship in Nuclear Engineering - 1968.

American Nuclear Society

RICHARD D. MACHON

RESUME OF QUALIFICATIONS

Richard D. Machon - 7 Wheelright Way - Smithtown, New York 11787

[redacted]

SUMMARY OF QUALIFICATIONS: Registered Professional Engineer, Licensed Nuclear Test Supervisor, Graduate Mechanical Engineer, Director of Outage Management, Nuclear Operations Manager, Assistant Station Manager, Plant Support Group Leader, Senior Operations Engineer, Systems Engineer, Start-up and Test Engineer.

EDUCATION

TECHNICAL

Northeastern University
Boston, Massachusetts
Mechanical Engineering (BS)

Shift Test Engineer Program
General Dynamics
Electric Boat Division
Groton, Connecticut
Qualified S5W 1972
S2W 1973

Westinghouse Plant
Information
Seminar 1976

Combustion Engineering
Management Simulator
Program 1977

General Physics BWR
Management Simulator
Program 1978

GE BWR Simulator
Morris, Illinois
Requalification
Program 1979

MANAGEMENT

Kepner-Tregoe Decision Analysis
Boston Edison Company 1978

Skills for Utility Management
Electric Council of New England 1979

Public Utilities Executive Program
University of Michigan 1983

Various AMA Courses: 1978-1982

Project Management — Zero Based Budgeting

Matrix Management — Strategic Planning

Stress Management

EXPERIENCE:

Impell Corporation
225 Broad Hollow Rd.
Melville, New York

Operations Services Manager
Accountable for establishing and providing the following services for Operating Nuclear Power Plants: maintenance & surveillance programs, spare parts, outage support, operating procedures & manuals, security, training, startup and test, operational QA/QC, emergency preparedness, construction management and decommissioning.

EXPERIENCE: (Cont'd)

Boston Edison Company
Pilgrim Nuclear Power Station
RFD#1, Rocky Hill Road
Plymouth, MA 02360

September 1982 - October 1983

Director of Outage Management
Reporting to the Senior Vice President Nuclear and accountable for scoping scheduled outages such that funding, scheduling, procurement and design can be accomplished to support approved tasks prior to commencing the outage. When the Unit was removed from service, accountable for performing the Outage on time within budget consistent with corporate policy and regulatory requirements.

In addition, during unscheduled outages, accountable for ensuring that the reason the Unit was removed from service is critical path unless pre-empted by other tasks of a more critical nature, and the impact on the operational budget is minimized and documented.

Testified before the Department of Public Utilities on Performance Issues regarding outages.

Aug. 1980-Sept. 1982

Nuclear Operations Manager
Reporting to the Vice President-Nuclear and accountable for the overall safe, reliable, and economic operation of Pilgrim Nuclear Power Station in accordance with Corporate policies and Regulatory requirements and responsible for providing the management controls to assure that Corporate policies and Regulatory requirements, as they pertained to the operation of Pilgrim Nuclear Power Station, are satisfied.

Also, a member of the Nuclear Safety Review and Audit Committee and the Emergency Director to coordinate and implement the Radiation Emergency Plan.

Aug. 1979-Aug. 1980

Assistant Station Manager - Nuclear Operations Department
Responsible for providing the technical and administrative guidance necessary to assure conformance with the Technical Specifications, Station Procedures, Regulatory Requirements and dependable operations of the Station. Acted as the Plant Manager during his absence and was Chairman of the Plant Operations Review Committee. Also responsible as Project Manager for the Mark I Program during the 1980 Refueling Outage.

EXPERIENCE: (Cont'd)

Oct. 1977-Aug. 1979

Plant Support Group Leader - Nuclear Operations Department
Responsible for providing the technical and administrative direction to the engineers assigned to perform the following functions in support of an operating BWR, NRC Licensing, Reliability Programs, Inservice Inspection Program, Radiation Protection program and to provide the operational review of a proposed PWR. Additional areas of supervision included the development and implementation of design changes required to improve plant performance and independent operational review of design changes from outside the department.

Feb. 1977-Oct. 1977

Senior Operations Engineer
Responsible for providing the Operational and Maintenance review of a proposed PWR. Specific areas included: Main Control Board Layout, P&ID Review System requirements, Logic reviews, component Selection, equipment layout, general operating philosophy and system interaction review.

Yankee Atomic Electric Company
20 Turnpike Road
Westboro, MA 01581

Feb. 1974-Feb. 1977

System Engineer
Responsible for providing the engineering and Licensing expertise required for the proper design, operational performance, and maintenance of nuclear power plant systems. Included in the above are preparation and/or review and approval of flow diagrams, specifications, system descriptions, performance test procedures, bidders' lists and proposals. Additional areas included Main Control Board Layout and system interaction review.

General Dynamics

Electric Boat Division
Eastern Point Road
Groton, CT

Nov. 1971-Feb. 1974

Qualified Nuclear Test Supervisor (S.T.E.)
Responsible, as the on-scene representative of Electric Boat management, for the safe and orderly conduct of all phases of Reactor Plant testing during both new construction and overhaul of submarines.

Shipbuilding Division
East Howard Street
Quinch, MA

June 1970-Nov. 1971

Test Engineer
Responsibilities included surveillance of installation procedures used in conjunction with hydraulic, pneumatic, and electro-mechanical systems and demonstration of these systems to the contractor, both Government and commercial.

ALAN D. MILLER

EDUCATION

B.S., Chemical Engineering, Iowa State University

Ph.D., Chemical Engineering, Universtiy of Wisconsin

PROFESSIONAL EXPERIENCE

Dr. Miller is Section Manager of Chemistry and Health Physics. He has extensive expertise implementing, organizing, and managing research and development projects. His broad experience at operating nuclear power plants encompasses water chemistry, radioactive waste processing, analytical instrumentation packages, radiation monitoring, and hardware and software packages for data acquisition/reduction systems.

Dr. Miller was responsible for organizing the Chemistry, Radiochemistry, and Radwaste Program Area for the Nuclear Safety Analysis Center following the accident at Three Mile Island, and coordinating these activities with the Electric Power Research Institute, the Atomic Industrial Forum, and the Edison Electric Institute. Specific work included hydrogen flammability and detonability studies, radiation source terms, radio-iodine transport, reactor containment structural capabilities, population radiation exposure, post-accident sampling, and radiation monitor response.

As a Project Manager for the Electric Power Research Institute, Dr. Miller worked in the Chemistry and Radiation Control Program. He managed work in advanced radwaste treatment systems, decontamination, iodine spiking, Boiling Water Reactor offgas systems, and water chemistry.

Dr. Miller has spent a considerable amount of time in the field at nuclear power plants supervising and conducting projects. These include continuous automated measurement of dissolved oxygen, specific conductance, and pH in high-purity water, water sampling systems, ion exchange resin performance and degradation, high-resolution gamma spectroscopy in reactor containments, and nuclear fuel crud deposit sampling. He has also completed the General Electric Boiling Water Reactor Chemistry training course for the training of plant site chemists.

PROFESSIONAL AFFILIATIONS

American Nuclear Society

American Association for the Advancement of Science

Edison Electric Institute Health Physics Committee, former EPRI representative

ASME Radwaste System Committee

PUBLICATIONS AND PRESENTATIONS

Miller, A.D., "NSAC Workshop on Post-Accident Sampling," ANS, San Francisco, November 1981

Kamil, H., M.C. Chen, G. Kost, and A.D. Miller, "Investigation of the Behavior of TMI-2 Containment Structure for Hydrogen Burn Accidents," Sixth International Conference on Structural Mechanics in Reactor Technology, Paris, August 1981.

Miller, A.D., M. Kolar, G. Lahti, C. Pelletier, and F. Rahn, "New Directions in Radiation Protection and Shielding," ANS, Bal Harbor, Florida, June 1981.

Miller, A.D., "Brunswick-2 Water Chemistry," EPRI NP-1795, April 1981.

Miller, A.D., "Short-Term Lessons Learned: Radiation Protection Recommendations - The NSAC Perspective," ANS, Washington, November 1980.

Miller, A.D., "Three Mile Island, - Accident Aftermath," ASCE, Iowa City, Iowa, September 1980.

Miller A.D., Radiation Source Terms and Shielding at TMI-2," ANS, Las Vegas, June 1980.

Miller, A.D., "Three Mile Island - What Happened," American Society of Civil Engineers, Ames, Iowa, October 1979.

Remark, J.F., and A.D. Miller, "Review of Plant Decontamination Methods," ANS, Sun Valley, September 1979.

PUBLICATIONS AND PRESENTATIONS (Continued)

Shaw, R.A., M.D. Naughton, and A.D. Miller, "Radiation Exposure, Radiation Control, and Decontamination," ANS, Sun Valley, September 1979.

Shaw, R.A., A.D. Miller, and M.D. Naughton, "Exposure and Radiation: U.S. Experience," IAEA/OECD-NEA, International Symposium on Occupational Radiation Exposure in Nuclear Fuel Cycle Facilities, Los Angeles, June 1979.

Miller, A.D., "Water Chemistry Characterization of a Boiling Water Reactor," Nucl. Tech., 37, 111 (1978).

Miller, A.D., "Electrogenerative Chloro- and Bromo-fluorination of Olefins from Aqueous Media; the Electrogenerative Cell as a Chemical Reactor," J. Appl. Chem. Biotechnol., 27, 176 (1977).

Indig, M.E., J.E. Weber, and A.D. Miller, "Monitoring Corrosion and Oxidation Potentials in a Boiling Water Reactor," Corros'on/77, San Francisco, March 1977.
Miller, A.D., E.L. Burley, D.T. Snyder, and K.A. Selby, "Water Chemistry Characterizations of a Boiling Water Reactor," ANS, New York, June 1977.

Miller, A.D., and S.L. Langer, "Electrogenerative Bromination," J. Electrochem. Soc., 120 (12), 1965 (1973).

Miller, A.D., "Electrogenerative Halogenation," PhD Thesis, University of Wisconsin, 1973.

JEFFREY A. OGAWA

EDUCATION

B.S. (with honors), Mechanical Engineering, University of California, Davis, California

PROFESSIONAL EXPERIENCE

Currently, Mr. Ogawa is a Supervising Engineer. He has over ten years experience in the design, licensing, maintenance, and testing of commercial nuclear power plants.

Prior to joining Impell, he participated in the design, licensing, and startup of Nuclear Steam Supply Systems (NSSS) and Balance of Plant (BOP) Systems with Bechtel Power Corporation. As a design engineer, Mr. Ogawa has prepared piping and instrumentation diagrams, logic diagrams, system descriptions, equipment specifications, and design calculations for BWR and PWR plants. He has also served as a licensing engineer for a Pressurized Water Reactor, responding to NRC, ACRS, and ASLB questions, reviewing and submitting SAR amendments, and reviewing accident analyses. Mr. Ogawa spent approximately one year working in the client's offices providing engineering support on BOP and nuclear systems for an operating BWR, as well as on-site engineering support during three refueling outages.

While with the Washington Public Power Supply System, Mr. Ogawa was the Lead Nuclear/Mechanical Engineer on the WNP-2 project engineering staff. His responsibilities included overseeing A/E design work, resolving startup problems, responding to licensing questions for Emergency Core Cooling Systems (ECCS) and NSSS, and interfacing with General Electric. Other responsibilities included project interface on ASME Code (Sections III and XI) problems and on generic issues, such as anticipated transients without scram, Browns Ferry 3, and issues related to Three Mile Island (NUREG 0737).

While with Burns and Roe, Inc. (BRI), Mr. Ogawa was the Nuclear/Mechanical Group Supervisor on WNP-2. He organized, coordinated, and implemented major assignments including containment isolation provisions and safe shutdown requirements per Appendix R. He assumed responsibility for

PROFESSIONAL EXPERIENCE (Continued)

interpreting and evaluating design, licensing and startup issues. While supervising up to seven engineers, he coordinated and reviewed FSAR question responses, established licensing positions, prepared engineering criteria, prepared both conceptual and detailed designs to implement design changes, and responded to startup problem reports and Nonconformance Reports. He also acted as the technical interface between BRI and General Electric and participted in the engineering transition from B&R to the Supply System.

PROFESSIONAL AFFILIATIONS

American Society of Mechanical Engineers

REGISTRATIONS AND LICENSES

Mechanical Engineer, State of Washington, Registration No. 19774

Mechanical Engineer, State of California, Registration No. M-17511

JOHN L. SKOLDS

EDUCATION

B.S., Applied Science
United States Naval Academy

Master of Business Administration (MBA), University of South Carolina

EXPERIENCE

Mr. Skolds has over ten (10) years of comprehensive operational and regulatory compliance experience within the domestic nuclear power industry.

With Impell, he has worked in a number of different areas. He has spent a significant amount of time assisting clients in the areas of Technical Specification evaluation and audit, fire protection, Regulatory Guide 1.97 activities and environmental qualification of equipment. He has also participated in the development of a client's emergency planning exercise.

Prior to joining Impell Corporation, Mr. Skolds was employed by the U.S. Nuclear Regulatory Commission for six (6) years. For four (4) years he served as Senior Resident Inspector at a nuclear power generating station. Mr. Skolds planned, supervised, and conducted operational inspections to ascertain whether the licensee complied with the provisions of its license and NRC rules and regulations. He performed in-depth evaluations of incidents and abnormal conditions at the plant to determine the safety significance of various events and the appropriateness of the licensee's response. He was kept informed of the results of inspections performed by specialists in the areas of radiological safety, environmental protection, fire protection, physical security and various engineering disciplines and made determinations as to which areas needed additional inspection effort. Mr. Skolds represented the NRC to the licensee, state and local officials and the news media concerning all matters that were within the responsibility of the NRC Regional Office. He conducted extensive inspections in the areas of preoperational testing, low power physics testing and power ascension testing. He was extensively involved in the generation of the facility's Technical

EXPERIENCE
(Continued)

Specifications. He conducted numerous inspections of administrative, operating and emergency procedures of this plant as well as the extensive review of the licensee's ISI Pump and Valve Program prior to the issuance of the operating license. Mr. Skolds was directly involved in closing various open items restricting both the low power operating license as well as the full power license of this plant and was involved in the resolution of TMI Action Plan Items prior to its licensing.

As a USNRC Region II Reactor Inspector, Mr. Skolds conducted reactor inspections at various operational nuclear power plants in the Southeast and completed Nuclear Regulatory Commission training (both classroom and simulator) in Boiling Water Reactors and Pressurized Water Reactors. He additionally performed inspections in the areas of operations, maintenance, training, and quality assurance at those same nuclear power generating facilities.

Prior to joining the USNRC, Mr. Skolds spent six (6) years with the U.S. Navy. For two (2) years, Mr. Skolds served as officer in charge of an operating crew at the Navy's S7G prototype facility. At that time, he conducted startup, preoperational, low power physics and power range testing on a new concept in reactor design and was responsible for the training, operations and maintenance performed by its operating crew. Mr. Skolds was qualified as a Chief Engineer while assigned to this facility.

DOUGLAS C. TIMMINS

EDUCATION

B.S., Physics, 1968, Texas Technological University, Lubbock, Texas

Graduate Studies in Business Administration, 1973-1975, Golden Gate University, San Francisco, California

Graduate Studies in Material Science, 1979, Joint Center for Graduate Study, Richland, Washington

PROFESSIONAL EXPERIENCE

Mr. Timmins is Impell's Area Coordinator in Richland, Washington. In this capacity he is responsible for managing local Impell work and employees. In addition he provides personal consulting services for a wide range of technical and licensing issues related to nuclear power plants.

Before joining Impell, Mr. Timmins' experience included seven years with the Supply System, three years with Bechtel Power Corporation, four years as an officer in the U.S. Navy Nuclear Power Program and one year with Shell Oil Company.

During his career with the Supply System, Mr. Timmins served in several staff, management and lead positions. As Technical Specialist to the WNP-2 Program Director, he provided counsel on project critical issues and functioned primarily in a problem solving mode. In this position he was the prime technical interface between the NRC, Inspection and Enforcement Branch, and the Project. His management responsibilities included engineering direction and resolution of construction and quality related problems. Significant issues managed by Mr. Timmins were: construction quality problems of the sacrificial shield wall, evaluation and subsequent establishment and implementation of improved construction and quality programs following an NRC Stop Work Order for WNP-2, resolution of NRC concerns related to I & E Bulletins 79-02 and 79-14, resolution of NRC concerns on electrical separation, and development of the Independent Design Review Program for WNP-2. His various assignments included: Technical Specialist; Assistant Manager, Engineering; Contractor Engineering Director; Program

PROFESSIONAL EXPERIENCE (Continued)

Manager; Engineering Supervisor and Lead Engineer. His technical responsibilities included: welding, corrosion, mechanical equipment, ASME Code and various standards, NSSS and balance-of-plant systems, radioactive waste processing systems, and Inservice Inspection.

Prior to the Supply System, Mr. Timmins worked for Bechtel Power Corporation as a Group Leader and Senior Engineer. His responsibilities included: managing radiation shielding, radiological and environmental analyses (including control room habitability and dose pathways), and performing design for radwaste processing and chemistry control and sampling systems.

During his naval career, Mr. Timmins qualified as Engineering Officer of the Watch and served as an Engineering Department Division Officer. As a Division Officer he was responsible for the reactor and secondary plant mechanical equipment, the propulsion equipment, and chemistry and radiological controls. His time in service was primarily associated with an extensive ship overhaul. The overhaul allowed Mr. Timmins to become intimate with equipment and system testing, maintenance and repair activities, and work under radiological conditions.

At Shell Oil Company Mr. Timmins was a petrophysicist. His responsibilities included assessment of oil and gas deposits for secondary recovery and making recommendations related to subsequent economic decisions.

PROFESSIONAL AFFILIATIONS

Sigma Pi Sigma - Honorary Physics Society

ASME Radwaste Systems Committee (past member)

EDWARD H. VERDERY

EDUCATION

B.S., U.S. Naval Academy, 1967

Naval Nuclear Power Training

Law School - Completed 3 yrs. of 4 yr. Program

EXPERIENCE

Mr. Verdery is a nuclear engineer with extensive experience in the operation, management and regulation of nuclear power plants. Currently, Mr. Verdery is the Manager of the Operations and Technical Services Division in Impell's Southeast Regional Office. He is responsible for production work associated with this 60-man division. Reporting to him are six Section Managers responsible for a wide array of management, operations, licensing and training services.

Prior to this assignment, Mr. Verdery was a Project Director for the Southeast Region. In that capacity, he was responsible for several project managers and all of the work performed by Impell Corporation for selected clients. Since joining Impell he has been involved in the development of new capabilities and clients to expand the Company's service areas. In addition, he has been actively involved with the ANS and AIF and has developed a broad perspective of industry needs and direction.

Mr. Verdery was recently involved in a key assignment for Louisiana Power and Light Co. at their Waterford 3 site. He served as a senior technical advisor to the Senior Vice President of Nuclear Operations. He was instrumental in evaluating several key technical areas and organizations to improve project effectiveness. The areas evaluated included project management and startup, design change control procedures, computer development, planning and scheduling and QA/QC effectiveness.

As an Operating Reactors Project Manager, he has managed the NRC licensing review of numerous technical issues affecting individual utilities as well as several generic issues affecting entire classes of plants. He was instrumental in the

EXPERIENCE (Continued)

implementation of 10CFR Part 50, Appendix I, ALARA, on all operating reactors as the NRC's Generic Project Manager. Other licensing issues of importance included, Core Reloads, ECCS, Fire Protection, BWR Mark I Containment Program, Power Grid Instability, Feedwater Flow Induced Water Hammer and BWR LPRM Flow Vibration Cracking. His exposure included the highest levels of the NRC and the nuclear industry.

Following his assignment in reactor licensing, Mr. Verdery was assigned as a principal inspector and section chief in the Reactor Operations and Nuclear Support Branch of the Office of Inspection and Enforcement, Region II. In that capacity, he managed the NRC inspection program at several Southeastern utilities. He played an important role in the NRC response to Three Mile Island and was instrumental in the implementation of Post TMI requirements at Crystal River and Oconee.

Prior to his NRC experiences, Mr. Verdery spent eight years as an officer in the nuclear submarine force and served as Chief Engineer of the USS Francis Scott Key and Training Officer at the SIC prototype, Windsor, Connecticut. In those positions, Mr. Verdery was intimately involved in the day to day operation and management of pressurized water reactors.

During his military career, Mr. Verdery was qualified as senior watch officer on four different nuclear reactor facilities. Additionally, he has been responsible for the training and qualification of several hundred power plant operators.

COMMITTEES

NRC Task Force on Review of Licensee Reporting Requirements

NRC Task Force on Review of Strategic Nuclear Material at Research Reactors

American Nuclear Society

GARY A. WEBER

EDUCATION

B.S., Electrical Engineering, cum laude, 1975, University of Michigan

B.A., Physics, 1974, Kalamazoo College

PROFESSIONAL EXPERIENCE

Mr. Weber is a Manager of Special Projects with extensive experience in nuclear plant operation, start-up, and analysis.

Mr. Weber's operating experience was gained as a plant engineer at a 2-unit, 4-loop PWR, where he gained working knowledge of plant staff organization and responsibilities. Mr. Weber's job required frequent interface with the plant's Technical, Operations, Maintenance, and QA Departments, and working knowledge of department operating and administrative procedures.

Mr. Weber is experienced in the supervision of technicians and maintenance personnel in plant design change implementation, electrical and mechanical equipment maintenance, and in coordinating personnel in the set-up and performance of surveillance tests. He was responsible for test development and administration, compliance with required Codes and standards, and test documentation. Mr. Weber is also familiar with NRC reporting requirements (LERs, non-conformance reports, test reports, etc.) and plant Technical Specifications.

As a plant engineer, Mr. Weber was responsible for performance and vibration testing and analysis, plant thermal performance monitoring, and troubleshooting of process control and logic system problems. Mr. Weber was responsible for the development of FORTRAN programs on the plant's process computer to compute a daily index of plant thermal performance. He has led investigations of plant transient events and has been successful in improving plant protective system reliability.

PROFESSIONAL EXPERIENCE (Continued)

As a start-up engineer, Mr. Weber has had field start-up and preoperational testing responsibilities at a large nuclear generating facility. Included in this experience was the start-up and testing of a plant's emergency diesel generators, emergency electrical power system, emergency core cooling system, auxiliary feedwater system, and both nuclear and non-nuclear HVAC systems. Mr. Weber has directed major testing efforts, including several primary containment local and integrated leak rate tests, a full-scale ASME heat rate test, Tavg optimization tests, and main turbine-generator trip and transient tests. Involvement in these tests has included preparation of the test procedures, the design, installation and start-up of microprocessor-based precision measurement and data acquisition systems, data evaluation, and reporting. One very unique test that Mr. Weber conducted involved the initial roll of a 1200MWe steam turbine generator during the startup of the second PWR unit at a two-unit plant. In addition to conducting this test, Mr. Weber designed the steam flow control and test instrumentation system that controlled the diversion of steam from the Main Steam System associated with the operating first unit to the turbine of the second unit.

Mr. Weber is familiar with and has applied many different analytical techniques to power plant electrical, I&C, and process systems. His work has included safety sequence analysis, system steady-state and transient analysis, instrument power failure mode and affects analysis, statistical error analysis, equipment qualification studies, radiation shielding studies, and plant thermal performance analysis. He has also had project engineering responsibilities for a major research effort to determine the response of power plant generation and auxiliary systems to grid electrical disturbances. Mr. Weber has prepared licensing submittals and interfaced directly with regulatory agencies on the behalf of Impell clients.

PROFESSIONAL EXPERIENCE (Continued)

Most recently, Mr. Weber has played a principal role in Impell Corporation's development of Safety Parameter Display system and Plant Safety Status Monitoring concepts and technology for implementing NUREG 0690 and Emergency Response Facility requirements.

Mr. Weber's experience also includes field engineering during the construction phase of a large power plant, where he performed electrical integrity tests on cable insulation, terminations, small motors, low-voltage circuit breakers, and motor control centers. He also has had experience with protective relaying calculations and auxiliary electrical system load flow computer analysis.

REGISTRATIONS AND LICENSES

Professional Engineer, State of Michigan Registration No. 27689

PROFESSIONAL AFFILIATIONS

Member, Institute of Electrical and Electronics Engineers

APPENDIX B

GENERAL GUIDELINES FOR GGNS TSRP PROCESS REVIEWS

A. SCOPE OF EFFORT

- What was the scope of the review effort, as expressed by the personnel participating in the review?
- What were the "inputs" or "source documents" used in the review? Were they appropriate, adequate?
- Are both of the above commensurate with the MP&L procedure governing this review effort (TS-1)?
- To what extent was this an "outside-in" review as opposed to an "inside-out" review?

B. PERSONNEL QUALIFICATIONS

- Were the personnel performing the review qualified commensurate with the task they were assigned?
- Was the collective experience of the participants sufficient to accomplish the job? (i.e., did they have to request help in selected areas & if so, did they get help?)
- Brief summary of qualifications/summary.

C. CONDUCT OF WORK

- Were the procedures, checklists adequate to ensure that the review would result in a high level of confidence that the GGNS TS are accurate

consistent with applicable regulatory guidance, complete?

- What was the depth of the review?

- Did the review consider the as-built condition of the plant? Was there documented evidence of this?

- What checks and balances (e.g., reviewer/checker) were applied to the review?

- Was operational input reflected in the review?

D. RESULTS

- Is documentation of the rationale for the conclusions provided? If not, can they be readily ascertained through discussions?

- Were problems identified? How were they dispositioned? Were proposed resolutions adequate (technically) (viz NRC format/content)?

- Were there differing views between the LRO and RPD on the dispositioning of comments/recommendations? If so, were they appropriately resolved?

- Are there any open items?

E. SUMMARY

- What is your level of confidence that the GGNS TS, as modified by the changes proposed by this review, are:

  a. Accurate/correct viz the as-built plant
  b. Consistent with NRC guidance for format and content
  c. Complete

APPENDIX C

Impell Notification Procedure

IMPELL NOTIFICATION PROCEDURE
(MP&L GGNS Technical Specification Review Program)

1.0 PURPOSE

The purpose of this procedure is to identify the means by which IMPELL will inform MP&L of a specific potential finding, observation or deviation by the IMPELL Corporation Third-Party Review Team.

2.0 BACKGROUND

The basic function of the Third-Party Review effort is to provide MP&L management with an independent assessment of the effectiveness of the GGNS TSRP. As such, the IMPELL findings, observations and deviations will deal with potential errors or omissions in the TSRP specific review process. Since the TSRP is an ongoing process, it is in the interest of all parties that potential specific concerns be communicated as soon as possible without compromising the independence of the Third-Party Review. Programmatic concerns will be handled o a real time basis through communication by the IMPELL Project Manager to MP&L's Senior Vice-President Nuclear. This notification procedure is intended to formalize how IMPELL will interact with the GGNS TSRP and allow them to address potential findings, observations, and deviations as identified by the IMPELL project team. Potential findings, observations, and deviations will be handled as preliminary until the GGNS TSRP has had the opportunity to answer. Final determination will be made following those answers.

3.0 DEFINITIONS

For purposes of this procedure the following definitions are given:

3.1 Finding - The need for a Technical Specification change has been determined by IMPELL to meet the criteria of MP&L's priority category 1A, B, or C and was not identified at the completion of the GGNS TSRP technical review [defined as following disposition by the Review Prioritization and Direction Group (RPD)].

3.2.1 Observation - Same as definition for a finding except that it meets the criteria of MP&L's priority category 2, A - I.

3.2.2 Deviation - Actual or potential need for an FSAR revision which was not identified at the completion of RPD review.

4.0 DETAILS

4.1 Each member of the IMPELL Third Party Review Team must ensure that any information reviewed which could potentially result in a finding, observation, or deviation is reported to the IMPELL Project Manager (J. C. Guibert) or his Deputy (E. H. Verdery) for evaluation and transmittal to the MP&L GGNS TSRP Project Manager and Senior Vice President of Nuclear Operations.

4.2 This action is particularly critical to provide MP&L with real time information on potential problems resulting from the IMPELL Third Party Review effort. This will not affect whether our subsequent evaluations consider the item reported to be significant or even accurate.

4.3 Each team member will execute the enclosed notification sheet and will submit it to the IMPELL Project Manager or his Deputy within 4 hours of the identification of a potential finding, observation or deviation.

4.4 IMPELL Project Manager will discuss the identified item with other team members and determined whether the MP&L technical review has been completed (closed by RPD). All items will be designated preliminary until MP&L GGNS TSRP has responded. Specific problems should not be reported to MP&L until after RPD review is complete unless early notification was approved by the IMPELL Project Manager.

4.5 All items reported to MP&L will be specifically identified in IMPELL's report and evaluated as to why the GGNS TS Review Program should have identified them.

4.6 The IMPELL Program Manager shall notify the MP&L Project Manager (C. Tyrone) and Senior Vice President of Nuclear Operations (J. Richard) as soon as possible the day the item is identified.

IMPELL NOTIFICATION SHEET

Item Number _____ Preliminary _____

Final _____

Identified by _____ Date _____

Tech Spec Reference _____

FSAR Reference _____

Problem Title _____

1. Problem Description (Tech Spec, FSAR, SER, Other):

2. Classification - Finding, Observation or Deviation:

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

4. Initial Disposition:

5. Notification to MP&L:

   Time _____ Date _____ Who Notified _____

6. MP&L GGNS TSRP Response:

7. Final Disposition by IMPELL:

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

APPENDIX D

Impell Notification Sheets
and
Supporting Documents

OBSERVATION 0-1

IMPELL NOTIFICATION SHEET

Item Number 0-1 qcs Preliminary X

Final

Identified by D. Timmins qcs Date 4-3-84

Tech Spec Reference 3/4.1.3.3

FSAR Reference 4.6.3.1.1.5 (p. 4.6-33)

Problem Title Accumulator level check

1. Problem Description (Tech Spec, FSAR, SER, Other):
FSAR requires accumulator level verification. 3/4.1.3.3 does not. *

2. Classification - Finding, Observation or Deviation:
Observation (Deviation)*

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:
Incomplete package. Doubt process would have identified item, FSAR review complete. Process was currently addressing other known concerns.

4. Initial Disposition:
Designated Observation

5. Notification to MP&L:
Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:
LEVEL SWITCH HAS NO DIRECT INDICATOR, BUT TIES IN WITH PRESSURE SWITCH FOR CONTROL ROOM ANNUNCIATION. T.S. REQUIRE WEEKLY CHECK OF PRESSURE GAUGE. THERE IS AN 18 MOS. CALIBRATION OF PRESSURE SWITCH AND AN 18 MOS. LEAK DETECTION TEST WHICH INCLUDES THE PRESSURE SWITCH AND THE LEVEL SWITCH.

7. Final Disposition by IMPELL:
MP&L HAS WRITTEN PROBLEM SHEET # 821 TO RESOLVE AND CLARIFY THE FSAR. VALID DEVIATION NOT OBSERVATION; RESOLUTION SATISFACTORY.

qcs Gilbert 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

* If FSAR is in error, a deviation exists, not an observation.

L18cdr3

Tech. Spec. 3/4.1.3.3

Subject: Control Rod Scram Accumulators

Responsible Org: General Electric

Package Status: Red (Incomplete package)

Documents considered in TSRP:
22A7467, Rev. 2; 22A7467AA, Rev. 4 (C11-4010); BWR 6 STS
767E673BA, Rev. 1; 762E412BA, Rev. 1; HCU design spec

Documents reviewed by Impell:
FSAR, SER, GEK 73700

Discussion:
Problem sheets 214 and 261 had been generated.
RPD was recycling issues due to insufficient information available to justify resolution of SRO comment.

GE stated their comment was originated from review/consideration of the GE design basis.

A number of items were ongoing, no comment.

Concerns / Problems:

FSAR, p. 4.6-33, states under Surveillance Tests, that level as well as pressure should be verified for the accumulator. This surveillance item was not in the GGNS Tech. Spec. in the package. The item had not been picked up under comments or problem sheets and the FSAR review was complete.

Excluding package items, no additional items were identified.

Impell Notification Sheet generated: yes X NO ___

OBSERVATION 0-2

IMPELL NOTIFICATION SHEET

Item Number 0-2 qcq

Preliminary X

Final

Identified by D. Timmins qcs Date 4-3-84

Tech Spec Reference 3/4.6.6.3

FSAR Reference 6.2.3 and 6.5.3

Problem Title Air flow units

1. Problem Description (Tech Spec, FSAR, SER, Other): surveillance procedure.

Circled documents use "cfm" units. for testing accuracy, should use "scfm". (*)

2. Classification - Finding, Observation or Deviation:

Observation (minor)

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. MP&L aware of similar situation. Evaluated as no change required.

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:

CFM IS APPROPRIATE FOR THIS APPLICATION. NO ACTION REQUIRED.

7. Final Disposition by IMPELL:

INVALID OBSERVATION; RESOLUTION SATISFACTORY.

JC Gaudet 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L18:dm3

(*) Recognize that @ normal testing conditi cfm ≈ scfm, but is still not correct.

OBSERVATION O-3

IMPELL NOTIFICATION SHEET

Item Number 0-3 qcj Preliminary X

Final

Identified by D. Timmins Date 4-3-84

Tech Spec Reference 3/4.6.6.3

FSAR Reference 6.2.3 and 6.5.3

Problem Title Air flow distribution test not included

1. Problem Description (Tech Spec, FSAR, SER, Other):

4.6.6.3.b.1 does not address paragraph C.5.b of Reg. Guide 1.52, Rev. 1 or 2.

2. Classification - Finding, Observation or Deviation:

Observation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Problem was identified by MP&L QA.

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:

PROBLEM SHEET #822 HAS BEEN WRITTEN TO ADDRESS THIS ITEM AND DEVIATION #3. MP&L ANTICIPATED POSITION IS TO NOT INCORPORATE THIS ITEM IN GGNS TS, BY TAKING EXCEPTION TO THE RELEVANT SECTION OF THE R.G., REV. 2. BASIS: POST-MAINTENANCE TEST NOT SURVEILLANCE TEST.

7. Final Disposition by IMPELL:

VALID OBSERVATION WHICH COULD, IN THE FUTURE, BE RECLASSIFIED AS A VALID DEVIATION; RESOLUTION PATH SATISFACTORY.

J P Jaudon 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

Tech. Spec. 3/4.6.6.3

Subject: Standby Gas Treatment System

Responsible Org: Bechtel

Package Status: Red

Documents considered in TSRP:
9645-M-632.0 Rev.13
↓ 1102A Rev.8A
1102B Rev.4
GEK 73503
9645-M-632.0-QS-1.4-8

Calcs. 3.9.3 Rev.C & 3.9.9 Rev.1
Regulatory Guide 1.52, Rev.2
9645-J-301.0-QS-4.1-1-0
9645-E-1257-15 Rev.6
9645-E-1257-02 Rev.6

Documents reviewed by Impell:
Precp 1T48PTΦ1
06-OP-1T48-R-0002, Rev.21
FSAR, SER
Regulatory Guide 1.52, Rev.1 and 2
ANSI N510-1975

Discussion:

Problem sheets 003, 062, 262 and 311 had been generated. Extensive logic-initiation review was conducted, FSAR change resulted.

Confirmed precp results support Tech. Spec. values, flows, times, etc.

Higher flow (≥4000 v.s. 2300) is conservative for exfiltration and HEPA and charcoal tests.

1st item describes O-3
2nd item describes DGI-5

Concerns/Problems:

ITEM #1 -3

Air flow distribution test of R.G. 1.52, para. C.5.b, is not included in the Tech. Spec. (ANSI N510-1975, paragraph 8). FSAR, App. 3A, states compliance to R.G. 1.52, Rev. 1, not Rev. 2.

ITEM #2 DGI-5

SER (p. 6-31) made error in Supplement 1 by revising 120 sec to 101 sec in paragraph 6.5.1.3. Various documents use "cfm" units. Units should be scfm to be correct and provide accurate baseline for testing. FSAR paragraph 6.2.3.1.1.c (p. 6.2-50) should have 120 seconds, not 101 seconds. FSAR states in 6.5.3 that long-term flow is 2300 cfm. Tech. Spec. and preop and (*)

Impell Notification Sheet generated: yes X NO ___

(*) surveillance procedure imply long-term flow is < 4000 cfm (≈ 3700), but not 2300.

OBSERVATION 0-4

IMPELL NOTIFICATION SHEET

Item Number 0-4 907 Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.6.7.2

FSAR Reference NA

Problem Title Hydrogen Ignition System glow plug protection

1. Problem Description (Tech Spec, FSAR, SER, Other):

Recommend including surveillance for the integrity of the seal box and hood spray shield. (7% per 18 months.

2. Classification - Finding, Observation or Deviation:

Observation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Inclusion of recommendation is probably subject to opinion

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C Tyrone

6. MP&L GGNS TSRP Response:

SURVEILLANCE NOT APPROPRIATE FOR INCLUSION IN T.S.; MP&L WILL CHECK FOR INCLUSION OF SUCH A REQUIREMENT IN T.S. OF OTHER PLANTS WITH Hydrogen Ignition SYSTEMS.

7. Final Disposition by IMPELL:

VALID OBSERVATION – RECLASSIFICATION PENDING CHECK WITH OTHER PLANTS. RESOLUTION PATH SATISFACTORY.

J P Gilot 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

Tech. Spec. 3/4.6.7.2

Subject: Hydrogen Ignition System

Responsible Org: Bechtel

Package Status: Red (Incomplete package)

Documents considered in TSRP:

9645-E-1186, shts. 46, Rev. 3
47, Rev. 3
48, Rev. 1

↓

E-1702F, Rev. 2

Similar to other STS, assume PN with ice condens

Documents reviewed by Impell:

Preop 1E61STΦ1 (1700°F), 9645-E-1702F, Rev. 2
06-EL-1E61-Q-0002, Rev. 20 (≥41 operable)
06-OP-1E61-R-0009, Rev. 20 (>1700°F)
FSAR, SER, discussion with Dennis Hacking (M.P&L)

Discussion:

Problem sheets 069 and 128 had been generated. Via D. Hacking pursued details on: emergency power supply, multitap transformer (120/12V), current draw test, flame damage to near proximity equipment, high heat areas and resultant equipment problems (standing flames off pool), glow plug ground resistance mount, and use of sealed box/hooded spray shield for containment spray and pool swell protection.

Note: No discussion in FSAR, in correspondence to da

Concerns / Problems:

After discussion on system operation and review of open issues, believe it would be prudent to periodically surveil the integrity of the seal box and hood spray shield. Recommend a surveillance at least once per 18 months on a glow plug % basis. Believe this recommendation is commensurate with a number of other such surveillances in the GGNS Tech. Specs. Loss of integrity could affect glow plug performance.

Impell Notification Sheet generated: yes X NO ___

OBSERVATION O-5

IMPELL NOTIFICATION SHEET

Item Number O-5 Preliminary X

Final

Identified by J. SKOLDS Date 4-2-84

Tech Spec Reference 3/4.6.7.3

FSAR Reference N/A

Problem Title ACCEPTANCE CRITERIA IN SCFM VS. SCFM

1. Problem Description (Tech Spec, FSAR, SER, (Other)): SURVEILLANCE PROCEDURE T.S. PACKAGE
T.S. PACKAGE DOES NOT INCLUDE CALCULATIONS TO SUPPORT 1000 cfm AS ACCEPTABLE - ALSO USES CFM VS SCFM IN Tech Spec.

2. Classification - Finding, (Observation) or Deviation: OBSERVATION

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:
Incomplete package - Doubtful that process would have identified this issue.

4. Initial Disposition:
Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. TYRONE

6. MP&L GGNS TSRP Response:
PROBLEM SHEET #19, WHICH ALREADY EXISTS, ADDRESSES THIS ISSUE.

7. Final Disposition by IMPELL:

INVALID OBSERVATION BASED ON ISSUE HAVING ALREADY BEEN IDENTIFIED.

J. P. Gilet 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

Tech. Spec. 3/4.6.7.3

Subject: Drywell Purge

Responsible Org: Bechtel

Package Status: NSSS/BOP Review complete

Documents considered in TSRP: FSAR/SER/STS
Bechtel drawings, Bechtel calculations.

Documents reviewed by Impell: FSAR/SER/STS
some Bechtel drawings, Bechtel calculations,
Compressor technical manual, System description.

Discussion:
The system was compared to the system as described in the FSAR as described in the FSAR
the drawings. No discrepancies were identified. The requirement to have 1000 cfm in surveillance requirement 4.6.7.3.b.1 was checked against Bechtel calculations as was the 1.0 psid setpoint for containment to drywell pressure. It was determined that the 1000 cfm was derived from negotiations with Bechtel after it was determined that 1180 cfm was needed to meet ~~a~~ NUREG 0588 requirements. The compressor could not handle 1180 so NUREG 0588

- Calculations were redone using 1000 cfm, a value achievable by the compressor. The calculations indicated that the 1000 cfm was adequate.

The P.O.C. was verified to be correct by reviewing Bechtel calculation J-E-61-1 Rev 3

~~odo~~

2 of 2

Concerns / Problems:

- The package does not include the calculations to support the acceptability of the 1000 cfm.
- Surveillance Procedure 06-OP-1E61-Q-0003 has acceptance criteria of 1000 ≥ scfm not cfm as indicated in the Technical Specification.

Impell Notification Sheet generated: yes X NO ~~X~~

OBSERVATION 0-6

IMPELL NOTIFICATION SHEET

Item Number 0-6 9c4 Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.8.2.1

FSAR Reference 8.3.2

Problem Title Reg. Guide compliance conflict

1. Problem Description (Tech Spec, FSAR, SER, Other):

Appears compliance to R.G. 1.32, Rev. 2, para. C.1.c, conflicts with GGNS Tech. Spec. 4.8.2.1.c.

2. Classification - Finding, Observation or Deviation:

Observation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Doubt if would have been identified. FSAR review was complete.

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:

Problem Sheet # 365 has been written to address this item, as well as 0-7 and 0-8. Confusing terminology and linkage between supporting standards.

7. Final Disposition by IMPELL:

Valid Observation. Resolution path satisfactory. (Pending Additional Review)

J P Gaudet 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

Tech. Spec. 3/4.8.2.1

Subject: D.C. Sources - Operating

Responsible Org: GE | Bechtel - Div. 3 | Div. 1 & 2

Package Status: Red (Incomplete package)

Documents considered in TSRP:
FSAR, SER, BWR6 STS, GE VPF E22-501
9645-E-1023, Rev. 16
06-EL-1L51-R-0001

Documents reviewed by Impell:
FSAR, SER, IEEE Std. 450-1972 and 1980,
Reg. Guide 1.32, Rev. 2, Reg. Guide 1.129, April 1977 and Rev.!
9645-M-1108A, Rev. 1
↓ J-1259, Sht. 1, Rev. 5
E-1267-01, Rev. 11

Discussion:
Problem sheets 135, 143, 227 and 288 had been generated.

LRO contacted vendor on PS 227.

BPC incorporated as-built load for PS 135.

Documented philosophy by BPC:

- GGNS TS = STS → GGNS TS is OK.
- GGNS TS is more conservative than STS → GGNS TS is OK.

Confirmed operation, interlocks and alarms on battery room ventilation fans. Refer to sheet 1a, attached.

3/4.8.2.1 Concern - H_2 buildup during charge.

battery room exhaust fan alarms-

low flow
no flow, i.e., not running
motor high temperature, i.e., bound

Impell reviewer was evaluating need for Tech. Spec. surveillance requirements on battery room exhaust fans, currently not addressed in STS or GGNS Tech. Spec.

After evaluating system operation, the fact that the battery and then the fans are backups to primary safety systems and re-reviewing 10CFR50.36, the conclusion was that the Tech. Specs. are correct and the additional fan surveillance need not be included.

BPC reviewer of GGNS Tech. Spec. 4.8.2.1.f did not understand criteria was for a degraded battery and confused the annual test with conservatism in the surveillance schedule.

→ O-6

Concerns / Problems:

FSAR states compliance to Reg. Guide 1.32, Rev. 2 in App. 3A. The Reg. Guide position C.1.c states: "The battery service test described in IEEE Std. 450-1975 should be performed in addition to the battery performance discharge test." GGNS Tech. Spec. 4.8.2.1.e states: "Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test." Appears to be a conflict.

O-7 ←

Reg. Guides 1.32 and 1.129 refer to IEEE Std. 450-1975. IEEE Std. 450-1972 and 1980 state under Capacity Test Schedule, Performance: (*)

Impell Notification Sheet generated: yes X NO ___

(*) A performance test of battery capacity ... should be made within the first two years of service. This test is not addressed in the GGNS Tech. Spec.

O-8 ←

The STS and GGNS Tech. Spec. have an internal conflict between 4.8.2.1.e and 4.8.2.1.f. If the battery capacity is <90% of manufacturer's rating, annual tests are required (4.8.2.1.f). This conflicts with ≥80% criteria in 4.8.2.1.e which allows 5 year intervals between 80 ~~and~~ to 90% battery capacity. (See p. 2a.) tests for

DCT 4/4/8

3/4.8.2.1

The apparent conflict, although not significant, should be cleaned up.

Since IEEE Std. 450-1972 and 1980 has same words, assumed IEEE Std. 450-1975 had same words. Could not locate copy of 1975 version at the GGNS site.

OBSERVATION O-7

IMPELL NOTIFICATION SHEET

Item Number 0-7 gcs Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.8.2.1

FSAR Reference 8.3.2

Problem Title Reg. Guide (IEEE Std.) compliance conflict

1. Problem Description (Tech Spec, FSAR, SER, Other):

Appears compliance to R.G. 1.32 and 1.129 (IEEE Std. 458 1975) with respect to a performance test within (*)

2. Classification - Finding, Observation or Deviation:

Observation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Doubt if would have been identified. FSAR review was complete.

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C Tyrone

6. MP&L GGNS TSRP Response:

PROBLEM SHEET #365 HAS BEEN WRITTEN TO ADDRESS THIS ITEM, AS WELL AS 0-6 AND 0-8. CONFUSING TERMINOLOGY AND LINKAGE BETWEEN SUPPORTING STANDARDS.

7. Final Disposition by IMPELL:

VALID OBSERVATION. RESOLUTION PATH SATISFACTORY. (PENDING ADDITIONAL REVIEWS)

4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

(*) first two years of service conflicts with GGNS Tech. Spec. 4.8.2.1, i.e., not included.

Tech. Spec. 3/4.8.2.1

Subject: D.C. Sources - Operating

Responsible Org: GE/Bechtel - Div. 3 | Div. 1&2

Package Status: Red (Incomplete package)

Documents considered in TSRP:
FSAR, SER, BWR6 STS, GE VPF E22-501
9645-E-1023, Rev. 16
06-EL-1L51-R-0001

Documents reviewed by Impell:
FSAR, SER, IEEE Std. 450-1972 and 1980,
Reg. Guide 1.32, Rev. 2, Reg. Guide 1.129, April 1977 and Rev. 1
9645-M-1108A, Rev. 1
↓ J-1259, Sht. 1, Rev. 5
E-1267-01, Rev. 11

Discussion:
Problem sheets 135, 143, 227 and 288 had been generated.

LRO contacted vendor on PS 227.

BPC incorporated as-built load for PS 135.

Documented philosophy by BPC:
- GGNS TS = STS → GGNS TS is OK.
- GGNS TS is more conservative than STS → GGNS TS is OK.

Confirmed operation, interlocks and alarms on battery room ventilation fans. Refer to sheet 1a, attached.

3/4.8.2.1 Concern - H_2 buildup during charge.

battery room exhaust fan alarms-

low flow
no flow, i.e., not running
motor high temperature, i.e., bound

Impell reviewer was evaluating need for Tech. Spec. surveillance requirements on battery room exhaust fans, currently not addressed in STS or GGNS Tech. Spec.

After evaluating system operation, the fact that the battery and then the fans are backups to primary safety systems and re-reviewing 10CFR50.36, the conclusion was that the Tech. Specs. are correct and the additional fan surveillance need not be included.

BPC reviewer of GGNS Tech. Spec. 4.8.2.1.f did not understand criteria was for a degraded battery and confused the annual test with conservatism in the surveillance schedule.

→ O-6

Concerns / Problems:

FSAR states compliance to Reg. Guide 1.32, Rev. 2 in App. 3A. The Reg. Guide position C.1.c states: "The battery service test described in IEEE Std. 450-1975 should be performed in addition to the battery performance discharge test." GGNS Tech. Spec. 4.8.2.1.e states: "Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test." Appears to be a conflict.

O-7 ←

Reg. Guides 1.32 and 1.129 refer to IEEE Std. 450-1975. IEEE Std. 450-1972 and 1980 state under Capacity Test Schedule, Performance: (*)

Impell Notification Sheet generated: yes X NO ___

(*) A performance test of battery capacity ... should be made within the first two years of service. This test is not addressed in the GGNS Tech. Spec.

O-8 ←

The STS and GGNS Tech. Spec. have an internal conflict between 4.8.2.1.e and 4.8.2.1.f. If the battery capacity is <90% of manufacturer's rating, annual tests are required (4.8.2.1.f). This conflicts with ≥80% criteria in 4.8.2.1.e which allows 5 year intervals between ~~and~~ 80 to 90% battery capacity. (See D. 2a.) DCT 4/4/5 tests for

3/4.8.2.1

The apparent conflict, although not significant, should be cleaned up.

Since IEEE Std. 450-1972 and 1980 has same words, assumed IEEE Std. 450-1975 had same words. Could not locate copy of 1975 version at the GGNS site.

OBSERVATION O-8

IMPELL NOTIFICATION SHEET

Item Number 0-8 gcs Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.8.2.1

FSAR Reference 8.3.2

Problem Title Tech. Spec. Clarity on surveillance interval

1. Problem Description (Tech Spec) FSAR, SER, Other):

Apparent conflict (requires clarity) between 4.8.2.1.e and 4.8.2.1.f. Annual tests for capacity (*)

2. Classification - Finding, Observation or Deviation:

Observation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Doubt if would have been identified. ~~FSAR review LCO~~ Not mentioned to date. DCJ 4-4-84

4. Initial Disposition:

Designated Observation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C Tyrone

6. MP&L GGNS TSRP Response:

Problem Sheet #365 has been written to address this item, as well as 0-6 and 0-7. Confusing terminology and linkage between supporting standards.

7. Final Disposition by IMPELL:

Valid Observation. Resolution Path Satisfactory. (Pending Additional Review)

J. P. Jaudon 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

(*) <90% is in conflict with 5 year interval tests for capacity >80%, 4.8.2.1.f and 4.8.2.1.e respectively.

Tech. Spec. 3/4.8.2.1

Subject: D.C. Sources - Operating

Responsible Org: GE | Bechtel - Div. 3 | Div. 1 & 2

Package Status: Red (Incomplete package)

Documents considered in TSRP:
FSAR, SER, BWR6 STS, GE VPF E22-501
9645-E-1023, Rev. 16
06-EL-1L51-R-0001

Documents reviewed by Impell:
FSAR, SER, IEEE Std. 450-1972 and 1980,
Reg. Guide 1.32, Rev. 2, Reg. Guide 1.129, April 1977 and Rev. 1
9645-M-1108A, Rev. 1
↓ J-1259, Sht. 1, Rev. 5
E-1267-01, Rev. 11

Discussion:
Problem sheets 135, 143, 227 and 288 had been generated.

LRO contacted vendor on PS 227.

BPC incorporated as-built load for PS 135.

Documented philosophy by BPC:
- GGNS TS = STS → GGNS TS is OK.
- GGNS TS is more conservative than STS → GGNS TS is OK.

Confirmed operation, interlocks and alarms on battery room ventilation fans. Refer to sheet 1a, attached.

3/4.8.2.1 Concern - H_2 buildup during charge.

battery room exhaust fan alarms-

low flow
no flow, i.e., not running
motor high temperature, i.e., bound

Impell reviewer was evaluating need for Tech. Spec. surveillance requirements on battery room exhaust fans, currently not addressed in STS or GGNS Tech. Spec.

After evaluating system operation, the fact that the battery and then the fans are backups to primary safety systems and re-reviewing 10CFR50.36, the conclusion was that the Tech. Specs. are correct and the additional fan surveillance need not be included.

BPC reviewer of GGNS Tech. Spec. 4.8.2.1.f did not understand criteria was for a degraded battery and confused the annual test with conservatism in the surveillance schedule.

→ O-6

Concerns/Problems:

FSAR states compliance to Reg. Guide 1.32, Rev. 2 in App. 3A. The Reg. Guide position C.1.c states: "The battery service test described in IEEE Std. 450-1975 should be performed in addition to the battery performance discharge test." GGNS Tech. Spec. 4.8.2.1.e states: "Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test." Appears to be a conflict.

O-7 ←

Reg. Guides 1.32 and 1.129 refer to IEEE Std. 450-1975. IEEE Std. 450-1972 and 1980 state under Capacity Test Schedule, Performance: (*)

Impell Notification Sheet generated: yes X NO ___

(*) A performance test of battery capacity ... should be made within the first two years of service. This test is not addressed in the GGNS Tech. Spec.

O-8 ←

The STS and GGNS Tech. Spec. have an internal conflict between 4.8.2.1.e and 4.8.2.1.f. If the battery capacity is <90% of manufacturer's rating, annual tests are required (4.8.2.1.f). This conflicts with ≥80% criteria in 4.8.2.1.e which allows 5 year intervals between 80 DCT 4/14/8 ~~and~~ to 90% battery capacity. (See p. 2a.) tests for

3/4.8.2.1

The apparent conflict, although not significant, should be cleaned up.

Since IEEE Std. 450-1972 and 1980 has same words, assumed IEEE Std. 450-1975 had same words. Could not locate copy of 1975 version at the GGNS site.

DEVIATION 1

IMPELL NOTIFICATION SHEET

Item Number DEV-1 9Q2 Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.1.3

FSAR Reference Table 1.3-1, Sht. 4 of 10

Problem Title Error in fuel assembly weight

1. Problem Description (Tech Spec, (FSAR), SER, Other):
FSAR Table 1.3-1 states weight is 600 lbs. Weight is ≈ 699 lbs. Fuel bundle ≈ 600 lbs.

2. Classification - Finding, Observation or Deviation:
Deviation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:
Incomplete package. Doubt process would have identified this minor deviation.

4. Initial Disposition:
Designated Deviation

5. Notification to MP&L:
Time 1700 Date 4/5/84 Who Notified C. TYRONE

6. MP&L GGNS TSRP Response:
NO LINKAGE BETWEEN T.S. AND FSAR ON THIS ISSUE. LETTER # PDF-84/0133 TRANSMITTED TO MP&L LICENSING TO CORRECT FSAR.

7. Final Disposition by IMPELL:
VALID DEVIATION, BUT TANGENTIAL TO TSRP SCOPE. RESOLUTION PATH SATISFACTORY.

J. P. Smith 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

Tech. Spec. 3/4.1.3.1

Subject: Control Rod Operability

Responsible Org: General Electric

Package Status: Red (Incomplete package)

Documents considered in TSRP:
22A7467, Rev. 2 (Design Spec.); 22A7467, Rev. 4, C11-4010 (Data Sh
NEDO21231, 1/77; 05-1-02-IV-1, Rev. 13; 06-IC-1C11-R-0002, Rev.
BWR6 STS

Documents reviewed by Impell:
FSAR, SER, GEK 73700 (Ops. and. Maintenance Inst.,
Control Sys. Vol. III, Part 4)

Discussion:

Problem sheets 014, 188 and 241 had been generated.
Actions appeared reasonable and were still ongoing.

~~Numbers~~ DCT 4-3-84

Concerns/Problems: (related to 3/4.1.3)

In the process of reviewing related data in the FSAR, a minor discrepancy was noted on Table 1.3-1, Sht. 4 of 10. The weight of a fuel assembly is ≅ 699 lbs.

Fuel bundle ≅ 600 lbs.
Fuel channel ≅ 99 lbs.
Fuel assembly ≅ 699 lbs.

Source - 22A5856, R.1
- 829E447, R.1

Excluding items in package, no additional items were identified

Impell Notification Sheet generated: yes X NO ___

DEVIATION 2

IMPELL NOTIFICATION SHEET

Item Number [redacted] DEV-2 Preliminary X

Final

Identified by D. Timmins Date 4-2-84

Tech Spec Reference 3/4.6.3.2

FSAR Reference 6.5.2

Problem Title Containment spray flow rate

1. Problem Description (Tech Spec) (FSAR) SER, Other):
Apparent error in assumption of containment spray flow rate, 5600 v.s. 5650 gpm.

2. Classification - Finding, Observation or Deviation:
~~Observation~~ JC GUIBERT DEVIATION

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:
Incomplete package. Believe error, if confirmed, should have been identified by BPC.

4. Initial Disposition:
Designated deviation

5. Notification to MP&L:
Time 1700 Date 4/5/84 Who Notified C. TYRONE

6. MP&L GGNS TSRP Response:
Letter # PDF-84/0135 TRANSMITTED TO MP&L LICENSING to RESOLVE APPARENT DISCREPANCY IN FSAR.

7. Final Disposition by IMPELL:
VALID DEVIATION, RESOLUTION PATH SATISFACTORY.
(PENDING additional review)
J P Gulbert 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L43cdm3

Tech. Spec. 3/4.6.3.2

Subject: Containment Spray

Responsible Org: Bechtel

Package Status: Red (Incomplete package)

Documents considered in TSRP:
9645-M-1085A, Rev. 22B BWR6 STS
9645-M-1085B, Rev. 20B
762E425BA, Rev. 7

Documents reviewed by Impell:
FSAR, SER,
9645-M-155.0 (Tech. Spec.) - Spray Engr. Co. nozzle
9645-M-1085B, Rev. 20B

Discussion:
Problem sheets 012, 169 and 233 had been generated.
STS stated do smoke/air test for system. BPC advised against with technical reasons. RPD over rode BPC recommendation based on inadequate justification for deletion in their opinion.

Concerns / Problems:

FSAR states have 350 nozzles per train with 16 gpm at 40 psid each. (Confirm by other documents.)

$350 \times 16 = 5600$ gpm. The spray iodine analysis assumes a spray flow rate of 5650 gpm. The flow test for ≥ 5650 gpm is via the RHR HX to the suppression pool. (RHR pumps have 7450 gpm @ 24 psid.)

$\frac{5650 - 5600}{5600} < 1\%$ and RHR pumps have more than adequate flow; hence, believe discrepancy is not significant, but need to reconcile FSAR and 4.6.3.2.

Impell Notification Sheet generated: yes X NO ___

Excluding items in package, no additional items were identified.

DEVIATION 3

IMPELL NOTIFICATION SHEET

Item Number DEV-3 YCY Preliminary X

Final

Identified by D. Timmins Date 4-3-84

Tech Spec Reference 3/4.6.6.3

FSAR Reference 6.2.3 and 6.5.3

Problem Title Reg. Guide rev. compliance

1. Problem Description (Tech Spec, FSAR, SER, Other):

FSAR, App. 3A, references Reg. Guide 1.52, Rev. 1 for compliance. SER and Tech Specs. reference Rev. 2.

2. Classification - Finding, Observation or Deviation:

Deviation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. MP&L QA aware.

4. Initial Disposition:

Designated Deviation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:

Problem Sheet # 822 has been written to reflect MP&L adoption of Rev. 2 to the R.G.

7. Final Disposition by IMPELL:

Valid Deviation. Resolution Path Satisfactory.

J. L. Spivey 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

DEVIATION 4

IMPELL NOTIFICATION SHEET

Item Number DEV-4 YCT Preliminary X

Final

Identified by D. Timmins Date 4-3-84

Tech Spec Reference 3/4.6.6.3

FSAR Reference 6.2.3 and 6.5.3

Problem Title SGTS Long-term flow

1. Problem Description (Tech Spec, (FSAR), SER, Other):
FSAR states in 6.5.3 (several places) that long-term flow is 2300 cfm. Tech. Spec., preop and surveillance procedure imply long-term flow is < 4000 cfm (≈3700), but not 2300

2. Classification - Finding, Observation or Deviation:

Deviation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:
DCT 4/4/84
Incomplete package. Doubt if would ~~be~~ have been identified, FSAR review is complete.

4. Initial Disposition:
Designated Deviation

5. Notification to MP&L:

Time 1700 Date 4/6/84 Who Notified C TYRONE

6. MP&L GGNS TSRP Response:
T.S. were revised in License Amendment # 7. FSAR update need previously identified, but not yet processed by MP&L licensing.

7. Final Disposition by IMPELL:

INVALID DEVIATION, BASED ON PREVIOUS IDENTIFICATION OF THIS ITEM.

J. O. Hunt 4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

DEVIATION 5

IMPELL NOTIFICATION SHEET

Item Number DEV-5 Preliminary X

Final

Identified by D. Timmins Date 4-3-84

Tech Spec Reference 3/4.6.6.3

FSAR Reference 6.2.3 and 6.5.3

Problem Title Time reference error

1. Problem Description (Tech Spec, (FSAR) SER, Other):

FSAR paragraph 6.2.3.1.1.c (p.6.2-50) should state 120 seconds.

2. Classification - Finding, Observation or Deviation:

Deviation

3. State of MP&L Review and Evaluation of MP&L Program's Ability to have found the Problem:

Incomplete package. Doubt if would have been identified, FSAR review is complete. (*)

4. Initial Disposition:

Designated Deviation

5. Notification to MP&L:

Time 1700 Date 4/5/84 Who Notified C. Tyrone

6. MP&L GGNS TSRP Response:

Problem Sheet # 822 has been written to resolve inaccuracy in FSAR.

7. Final Disposition by IMPELL:

Valid Deviation. Resolution path satisfactory.

4/11/84

cc: Mr. C. Tyrone, Project Manager
Mr. J. Richard, Senior Vice President Nuclear Operations

L48cdm3

* Subtle point, potential confusion on time from actuation signal v.s. broadcast time.

Tech. Spec. 3/4.6.6.3

Subject: Standby Gas Treatment System

Responsible Org: Bechtel

Package Status: Red

Documents considered in TSRP:
9645-M-632.0 Rev.13
↓ 1102A Rev.8A
1102B Rev.4
GEK 73503
9645-M-632.0-QS-1.4-8
Calcs. 3.9.3 Rev.C & 3.9.9 Rev.1
Regulatory Guide 1.52, Rev.2.
9645-J-301.0-QS-4.1-1-0
9645-E-1257-15 Rev.6
9645-E-1257-02 Rev.6

Documents reviewed by Impell:
Preop 1T48PT01
06-OP-1T48-R-0002, Rev.21
FSAR, SER
Regulatory Guide 1.52, Rev.1 and 2
ANSI N510-1975

Discussion:
Problem sheets 003, 062, 262 and 311 had been generated. Extensive logic-initiation review was conducted, FSAR change resulted.

Confirmed preop results support Tech. Spec. values, flows, times, etc.

Higher flow (2400 v.s. 2300) is conservative for exfiltration and HEPA and charcoal tests.

1st item describes O-3
2nd item describes DCV-5

Concerns / Problems:

ITEM #1 O-3

Air flow distribution test of R.G. 1.52, para. C.5.b, is not included in the Tech. Spec. (ANSI N510-1975, paragraph 8). FSAR, App. 3A, states compliance to R.G. 1.52, Rev. 1, not Rev. 2. SER (p. 6-31) made error in Supplement 1 by revising 120 sec to 101 sec in paragraph 6.5.1.3. Various documents use "cfm" units. Units should be scfm to be correct and provide accurate baseline for testing. FSAR paragraph 6.2.3.1.1.c (p. 6.2-50) should have 120 seconds, not 101 seconds. FSAR states in 6.5.3 that long-term flow is 2300 cfm. Tech. Spec. and preop and (*)

ITEM #2 DCV-5

Impell Notification Sheet generated: yes X NO ____

(*) surveillance procedure imply long-term flow is < 4000 cfm (≈ 3700), but not 2300.