

FIRE PROTECTION
TASK ACTION PLAN
(FP-TAP)

January 14, 1994

Office of Nuclear Reactor Regulation
Plant Systems Branch
Special Projects Section

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FIRE PROTECTION TASK ACTION PLAN SECOND QUARTERLY UPDATE

EXECUTIVE SUMMARY

The Fire Protection Task Action Plan (FP-TAP) addresses the recommendations made in the "Report on the Reassessment of the NRC Fire Protection Program" of February 27, 1993. This is the second quarterly update of the FP-TAP.

NRC STAFF ACTIONS DURING THE PAST QUARTER

- Met with Brookhaven National Laboratory representatives to discuss the results of its plant shutdown procedure review and adjust the scope of the study plan (Fire Protection Task Action Plan Part I).
- Participated in meetings with NUMARC to discuss proposed performance-based fire protection requirements (Part I).
- Reviewed preliminary results of small-scale fire endurance tests of fire barrier materials other than Thermo-Lag (Part I).
- Disseminated to the NRR staff comprehensive information on existing databases (Part I).
- Completed the review of GSI-57 and GSI-106 (Part III).
- Prepared NRR Office Letter 116, which provides guidance to the NRR staff on procedures for proper implementation of new requirements (Part IV).

PLANNED ACTIONS

- Revise NRC fire protection regulation (Appendix R) (Part I).
- Complete the review of fire barriers other than Thermo-Lag (Part I).
- Evaluate current NRR information management systems (Part I).
- Develop fire protection training program for NRC staff (Part I).
- Assess reassessment recommendations for further study (Part II).
- Confirm that the Fire Risk Scoping Study addresses all safety-significant issues (Part III).
- Apply lessons learned from the fire protection program reassessment to other NRR programs if warranted (Part IV).

FIRE PROTECTION TASK ACTION PLAN

SECOND QUARTERLY UPDATE

IMPLEMENTATION OF THE RECOMMENDATIONS MADE IN THE REASSESSMENT OF THE NRC FIRE PROTECTION PROGRAM REPORT OF FEBRUARY 27, 1993

INTRODUCTION

A reassessment of the NRR reactor fire protection program was performed in response to the programmatic concerns raised during the review of Thermo-Lag fire barriers (Part IV of the Thermo-Lag Action Plan). The results were provided in the "Report on the Reassessment of the NRC Fire Protection Program" of February 27, 1993. The Fire Protection Task Action Plan (FP-TAP) addresses implementation of the recommendations made in the reassessment report. This is the second quarterly update of the FP-TAP.

The FP-TAP is divided into four parts. It addresses implementation of the following reassessment report recommendations and followup items.

- Part I Eight major recommendations for action¹
 Recommendations 1-1 through 1-8
- Part II Four recommendations for further study
 Recommendations 2-1 through 2-4
- Part III Five confirmation issues
 Recommendations 3-1 through 3-5
- Part IV Other Issues

A personal computer-based project management program is used to track and manage the FP-TAP. The program tracks task details, schedules, and completion dates. The attachment to this action plan is a Gantt chart that identifies each task with its schedule and status. The FP-TAP is revised as needed to add tasks that arise during the reviews, and to account for changing resources, work assignments, and priorities. Some of the recommendations for further study (Part II) and the confirmation issues (Part III) may involve significant resource implications. The staff will first perform preliminary assessments to determine whether or not any of the recommendations or issues will require new initiatives. If so, the staff will consider at least a qualitative cost/benefits analysis before fully implementing the recommendation. The action plan will be completed within the stated schedules if sufficient resources are available.

¹ Implementation of the part of Recommendation 1-2b that addressed reevaluating the reviews done for qualification testing of electrical equipment is addressed in the Equipment Qualification Task Action Plan (WITS 9300107)

The following sections identify the individual recommendations, the scope of the implementing tasks, the estimated staff effort and technical assistance (resources), durations and completion dates, and status.

PART I RECOMMENDATIONS FOR ACTION

This part of the FP-TAP addresses the recommendations characterized as most significant in the reassessment of the NRC fire protection report of February 27, 1993.

RECOMMENDATION 1-1. FIRE PROTECTION REGULATION REVISION

Recommendation: The activities in the NRC Office of Research (RES) relating to a potential revision of the fire protection regulation (Appendix R) should be strongly supported.

Scope: Coordinate activities related to the proposed revision of the fire protection regulation.

Staff effort: 1 year and 4 months

Tech assistance: RES technical assistance estimated for this effort is \$580K. Technical assistance contracts between RES and the National Institute of Standards and Technology (NIST) and Brookhaven National Laboratories (BNL) are in place. NRR also has a technical assistance contract with BNL.

Duration: 3 years and four months.

Completion date: December 1995.

Status: Started. Completion date and resources unchanged.

The Plant Systems Branch (SPLB) continues to support RES activities relating to the proposed revision of the fire protection regulation. SPLB staff participated with RES staff in a series of meetings with NUMARC to discuss the proposed performance-based fire protection requirements. RES activities included surveying existing performance-based practices and approaches, studying a risk-based approach to performance-based requirements, and consideration of a case study. Additional efforts related to this recommendation are addressed under Recommendation 1-7.

The staff is currently assessing the tasks needed to complete this effort and their associated resource requirements. The FP-TAP will be revised to reflect the results of this assessment.

RECOMMENDATION 1-2a. FIRE TEST ACCEPTANCE CRITERIA

Recommendation: Current staff activity to clearly document a set of criteria for reviewing fire barrier endurance tests should continue

to receive high priority and continue to receive close management oversight.

Status: No action is needed through the FP-TAP. Implementation of this recommendation is covered by Part I of the Thermo-Lag Action Plan.

RECOMMENDATION 1-2b, FIRE BARRIER SYSTEMS OTHER THAN THERMO-LAG

Recommendation: The Plant Systems Branch, NRR, should reevaluate the reviews done for fire barriers other than Thermo-Lag and for electrical equipment qualification testing (EQ).

Scope: Assess the ability of these other fire barrier systems to meet NRC fire protection guidelines and requirements.

Assess the previous staff reviews of qualification testing of fire barrier systems other than Thermo-Lag.

Staff effort: 12 months.

Tech assistance: \$125K.

Duration: 15 months.

Completion date: May 1994.

Status: Started. Completion date and resources unchanged

Testing of the MT 3-hour wrap (Promatec) at the National Institute of Standards and Technology (NIST) completed the scheduled small-scale tests of fire barrier materials other than Thermo-Lag. Preliminary data and observations made during the tests indicate satisfactory thermal performance of these materials. The staff does not plan to devote additional resources for testing of these materials at this time. NIST is expected to provide a draft report for staff review by the end of January 1994.

The staff also is reviewing information received from fire barrier vendors in response to staff questions. One of the vendors, Darchem, Limited, informed the staff that it does not supply fire barrier systems to NRC licensees. Therefore, the staff will not review the Darchem fire barrier system.

RECOMMENDATION 1-3, ASSESS MANAGEMENT INFORMATION SYSTEM NEEDS

Recommendation: Management should initiate follow-up actions to identify specific areas to be improved in developing an integrated management information system. In addition, senior agency management should set clear expectations for the staff's use of such a system.

Scope: Near term: Identify the systems that currently reside within NRR, determine their limitations and capabilities, and make the information available to others in NRR.

Long term: Evaluate existing management tracking systems and information retrieval systems to assess the extent to which they meet NRR office needs.

Staff effort: 6 months.

Duration: 18 months.

Completion date: December 1994.

Status: Started. Completion date and resources unchanged.

This activity is being performed by the Program Management, Policy Development, and Analysis Staff (PMAS), NRR. A survey of the current NRR databases has been completed. A memorandum disseminating the survey results to the NRR staff was issued on October 22, 1993.

RECOMMENDATION 1-4. ASSESS RESOURCES NEEDED FOR THERMO-LAG AND FP-TAP REVIEWS

Recommendation: Additional staff resources may be appropriate, in the short term, to address the Thermo-Lag Action Plan and to address these recommendations.

Scope: Determine resources needed to address the Thermo-Lag Action Plan and to implement the fire protection program reassessment report recommendations.

Staff effort: 2 weeks.

Duration: 2 months.

Completion date: June 1993.

Status: Completed.

SPLB assessed the NRR resources available to implement the Thermo-Lag Action Plan and the FP-TAP in accordance with the schedules identified in the action plans. A senior fire protection engineer has been added to the NRR staffing plan to assist in the completion of the action plans. A candidate for the position has been selected and is expected to join the SPLB staff during the first quarter of 1994.

RECOMMENDATION 1-5. DEVELOP FIRE PROTECTION TRAINING PROGRAM

Recommendation: The Plant Systems Branch Chief, NRR, should initiate discussions with the other NRR branches, the Office for Analysis and Evaluation of Operational Data, and the Office of Research with the goal of developing a fire protection

training course (or courses) for staff reviewers, regional and resident inspectors, and for the staff involved in following up on problem indications.

Scope: Identify key personnel within the Office of Personnel, AEOD, RES, TTC, NRR, and the regions and solicit their needs and ideas for fire protection training. Formation of a task force or working group will be considered.

Propose to NRC management a fire protection training program for staff reviewers, regional and resident inspectors and for the staff involved in problem indicators follow-up.

Staff effort: 6 months.

Tech assistance: \$200K.

Duration: 16 months.

Completion date: June 1995.

Status: Future. Resources unchanged. The completion date of June 30, 1995, may need to be postponed by one year unless a significant portion of the resources involved in developing the training program is assumed by other NRC Office(s) or additional man-power is made available to SPLB. The current SPLB staff is devoting the major part of its resources to the resolution of the remaining Thermo-Lag issues, advanced reactor reviews, and plant-specific licensing actions and does not anticipate a reduction of its work load for some time.

The staff also plans to consider commercially available training programs to determine whether or not existing programs can be used to satisfy the intent of the recommendation. If so, this effort can be reduced considerably.

Technical assistance will be needed to develop the training program. Full implementation of the training program, which is expected to take several years, will not be tracked in this action plan. This task will end when the training program is finalized.

RECOMMENDATION 1-6. COORDINATION OF FIRE PROTECTION REVIEWS AND INSPECTIONS

Recommendation: The Plant Systems Branch Chief, NRR, should initiate discussions with the other NRR branches and the regional offices with the goal of developing a coordinated approach to fire protection and systems reviews and inspections. A pilot project to undertake one coordinated review and one coordinated inspection may be an appropriate step in such a program. The scope of the staff's fire protection inspection should be reevaluated in light of the insights

from the Region I special fire safety inspections. The scope of the fire protection review and inspection should be checked against the recommended list of areas in Table 10.2.2 of Enclosure 1 to the reassessment report.

Scope:

Reevaluate the scope of the staff's fire protection inspections in light of the insights from the Region I special fire safety inspections.

Assess the areas listed in Table 10.2.2 of Enclosure 1 of the reassessment report and determine if the fire protection review and inspection programs address the following issues.

Adequacy of manual fire fighting effectiveness.

Adequacy of local control capability for ventilation systems/dampers.

Adequacy of fire brigade notification and response procedures.

Adequacy of fire barrier elements.

Adequacy of protection from control systems interactions.

Adequacy of equipment protection from fire suppression system actuations.

Potential vulnerabilities due to broken or leaking flammable gas lines.

Potential vulnerabilities due to seismic/fire interactions.

Adequacy of sprinkler installations.

Adequacy of fire safe shutdown capability and procedures.

Adequacy of Technical Specifications in addressing upgraded fire barriers.

Adequacy of in-place detector testing.

Adequacy of fire damper testing.

Adequacy of licensee QA programs for fire protection.

Adequacy of Fire Hazards Analyses and fire analyses performed by licensees (i.e., 50.59 reviews).

Effect of fire barriers and cable coatings on ampacity.

Review documents such as current review and inspection guidance and procedures (for example, Standard Review Plan, inspection modules, and office letters); reports documenting reviews and inspections; and recent generic communications. The assessment will be used to determine whether or not there are weaknesses with the staff's current review and inspection practices.

Advise management of the results of the assessment and recommend revised review and inspection approach, if warranted. If needed, revise SRP, inspection modules, office letters, etc. to incorporate revised approach.

Staff effort: 13 months.

Duration: 24 months.

Completion date: February 1996.

Status: Future. Completion date and resources unchanged.

Preliminary assessment indicates that adequate coordination between fire protection engineers and systems engineers currently exists. However, SPLB (with support from other branches and regions, as appropriate) will assess the scope of the fire protection reviews and inspections and will propose, if warranted, a revised approach.

RECOMMENDATION 1-7. ELECTRICAL LOAD MANAGEMENT FOLLOWING A SAFE SHUTDOWN FIRE

Recommendation: The Plant Systems Branch, NRR, should give high priority to the recent study of self-induced station blackout to deal with fires. In addition, the study should be expanded since the Region I inspections have indicated that concerns can remain even for those plants which only selectively shut down electrical power systems.

Scope: Continue the current review of electrical load management with contractor support.

Expand the study to include those plants which only selectively shutdown electrical power systems.

Staff effort: 3 months.

Tech assistance: \$234K.

Duration: 18 months.

Completion date: November 1994.

Status: Started. Completion date and resources unchanged.

A technical assistance contract with Brookhaven National Laboratory (BNL) is currently in place for the study of fire-related electrical load management. BNL has reviewed the shutdown procedures for each operating reactor. The purpose of the review was to identify the facilities whose post-fire safe shutdown procedures for achieving and maintaining safe shutdown specify partial or total isolation of onsite or offsite electrical power sources. BNL representatives discussed the initial results of this review with SPLB staff and adjusted the scope of the study plan to include only the facilities that use partial or total electrical power shutdown to deal with fires.

RECOMMENDATION 1-B. REASSESS THE "FIVE" METHODOLOGY

Recommendation: The effectiveness of the Fire Induced Vulnerability Evaluation (FIVE) Methodology should be reassessed for use in the Individual Plant Examination External Events (IPEEE) Program. In addition, the IPEEE program plays such a significant role in addressing seismically-induced fire scenarios that the staff should place special emphasis on this part of their review of the IPEEEs.

Scope: A weakness was identified in the "FIVE" methodology diagram (screening process) that is not consistent with staff expectations. RES will determine what the Electric Power Research Institute (EPRI) did during training, determine if what the chart states is true and the way industry conducts the methodology, and determine what is being done in IPEEEs.

The staff will place appropriate emphasis on seismically induced fire scenarios in their review of the IPEEEs.

Staff effort: 2 months.

Duration: 8 months.

Completion date: February 1993.

Status: Started. Resources unchanged. The completion date has been changed from December 1993 to February 1994 to allow for staff review of the errata sheets.

In a letter of July 26, 1993, the staff asked NUMARC to clarify the EPRI final report, TR-100370, "Fire Induced Vulnerability Evaluation." In a letter of September 7, 1993, NUMARC agreed with the proposed clarification and stated that EPRI would develop the errata sheets and provide them to the staff for review. The errata sheets were submitted to the staff by NUMARC on September 30, 1993. They are under staff review.

PART II RECOMMENDATIONS FOR FURTHER STUDY

This part of the FP-TAP addresses the recommendations for further study from the reassessment of the NRC fire protection report of February 27, 1993. Some of the following recommendations may involve significant resource implications. The staff will first perform preliminary assessments of each recommendation to determine whether or not the recommendation will require new initiatives. If so, the staff will consider at least a qualitative cost benefits analysis before fully implementing the recommendation.

RECOMMENDATION 2-1, BIOFOULING OF FIRE WATER SYSTEMS

Recommendation: The Plant Systems Branch, NRR, should assess the implications of biofouling on the fire protection system and develop a recommendation for management review.

Scope: Assess the implications of biofouling on the fire protection system and develop recommendations for management consideration.

Staff effort: 6 weeks.

Duration: 6 months.

Completion date: June 1994.

Status: Future. Completion date and resources unchanged.

RECOMMENDATION 2-2, OPERABILITY REQUIREMENTS FOR SAFE SHUTDOWN EQUIPMENT

Recommendation: The Plant Systems Branch, NRR, should work with the Technical Specifications (TS) Branch, NRR, to determine: whether existing operability requirements and/or administrative controls for Appendix R safe shutdown equipment during operating and shutdown conditions are adequate and to determine if any additional requirements are appropriate for Appendix R safe shutdown equipment.

Scope: SPLB will work with the TS Branch to address the recommendations above which includes all aspects of backfit and current implementation.

Staff effort: 4 months (Technical assistance funding or RES may be needed to do cost-benefit analysis.)

Duration: 18 months.

Completion date: November 1995.

Status: Future. Completion date and resources unchanged.

RECOMMENDATION 2-3, FIRE BARRIER SURVEILLANCE REQUIREMENTS

Recommendation: The Plant Systems Branch, NRR, should determine whether pre-1979 Technical Specifications for active fire barriers (e.g., dampers, fire doors, etc.) are adequate.

Staff effort: 3 weeks.

Duration: 4 months.

Completion date: February 1995.

Status: Future. Completion date and resources unchanged.

Preliminary assessment indicates that adequate procedures are in place for active fire barriers. Ongoing plant specific inspections will continue to verify that the procedures are adequate. SPLB will reconsider this recommendation at a later date.

RECOMMENDATION 2-4, FIRE BARRIER RELIABILITY

Recommendation: Fire barrier elements are qualified with negative pressure conditions existing on the side of the barrier exposed to the fire. This may not be conservative if fires can occur where the pressure on the exposed side of the barrier is actually positive. Also, seals that contain air passages can allow flames and hot gases to pass through. The Plant Systems Branch, NRR, should consider specific testing to determine whether fire barriers are sufficiently reliable.

Scope: RES is currently reviewing fire barrier reliability under Generic Issue 149. SPLB will assess the scope and priority of the RES effort. SPLB will advise RES of the results of its assessment if changes in the scope or priority are warranted.

Staff effort: 3 months.

Duration: 12 months.

Completion date: February 1995.

Status: Future. Completion date and resources unchanged.

PART III CONFIRMATION ISSUES

This part of the FP-TAP addresses the confirmation issues identified in the reassessment of the NRC fire protection report of February 7, 1993. Some of the following confirmation issues may contain significant resource implications. The staff will first perform a preliminary assessment to determine whether or not any of the following recommendations will require new initiatives. If so, the staff will first consider at least a qualitative cost/benefits analysis before fully implementing the recommendation.

RECOMMENDATIONS 3-1, 3-2, 3-3 AND 3-4, GENERIC ISSUES

Recommendation: The Plant Systems Branch, NRR, should review the following issues and confirm that the NRC's current requirements or on-going programs adequately address the underlying safety concern:

- GSI-148 Adequacy of Manual Fire Fighting Effectiveness (3-1).
- GSI-147 Fire Related Control Systems Interactions (3-2).
- GSI-57 Effects of Fire Protection System Actuation on Safety-Related Equipment (3-3).
- GSI-106 Broken or Leaking Flammable Gas Lines (3-4).

Scope: SPLB will review the issues above and provide confirmation or alternative action.

Staff effort: 4 months.

Duration: 19 months.

Completion date: March 1995.

Status: Recommendations 3-3 (GSI-57) and 3-4 (GSI-106) are completed. Recommendations 3-1 (GSI-148) and 3-2 (GSI-147) start in future. The completion date and resources for Recommendations 3-1 and 3-2 are unchanged. However, the overall completion date is revised from October 1995 to March 1995 due to the early completion of Recommendation 3-4.

Recommendation 3-3 (GSI-57) was completed by NRR concurrence with NUREG-1472, "Regulatory Analysis for the Resolution of Generic Issue 57," October 1993. From its participation in Advisory Committee on Reactor Safeguards and its review of the NUREG report, NRR staff concluded that the underlying safety issue was adequately addressed.

Recommendation 3-4 (GSI-106) was completed by NRR concurrence with Generic Letter 93-06, "Research Results on Generic Safety Issue 106, Piping and the Use of Highly Combustible Gases in Vital Areas," October 25, 1993. From its review of NUREG-1364, "Regulatory Analysis for the Resolution of Generic Safety Issue 106: Piping and the Use of Highly Combustible Gases in Vital Areas," and GL 93-06, NRR staff concluded that the underlying safety issue was adequately addressed.

RECOMMENDATION 3-5. FIRE PROTECTION CONFIRMATORY ISSUES

Recommendation: The Plant Systems Branch, NRR, should review the technical issues identified in Table 10.2-1 of Enclosure 1 of the reassessment report and confirm that they do not raise significant safety concerns or require additional staff review. The Plant Systems Branch, NRR, should initiate a dialogue with NRR and the Office of Research to confirm that there are no safety significant issues from the Fire Risk Scoping Study which remain unresolved. The Plant Systems Branch, NRR, should identify any additional actions necessary, in their view, to strengthen the NRC Fire Protection Program.

Scope: Assess the following technical issues and determine whether or not they raise any significant safety concerns.

Capability to man the fire brigade and shutdown the plant from outside the control room simultaneously.

Acceptability of the fire brigade responding to a fire outside the plant or protected area.

Adequacy of local control capability for ventilation systems/dampers.

Adequacy of fire brigade notification and response procedures.

Acceptability of the thermal damage threshold currently assigned to electrical cables in light of the Sandia test results.

Effect of fire barriers and cable coatings on ampacity (Thermo-Lag Action Plan).

Effects of fire and smoke on plant equipment.

Adequacy of sprinkler installations.

Acceptability of using foam and deluge nozzles in high fire hazard areas.

Adequacy of fire safe shutdown capability and procedures.

Adequacy of in-place detector testing.

Adequacy of licensee QA programs for fire protection.

Adequacy of Fire Hazards Analyses and fire analyses (i.e., 50.59 reviews) performed by licensees.

Adequacy of NRC reporting requirements for fire events.

Reassess the fire risk scoping study and coordinate any unresolved issues with RES (SPLB).

Perform a programmatic review of the fire protection review and inspection programs and identify any additional action necessary to strengthen the programs (SPLB).

Staff effort: Under development.

Duration: 24 months (preliminary estimate).

Completion date: May 1997 (preliminary estimate).

Status: Future. Completion date and resources unchanged.

There is overlap between most of the confirmation issues and those previously identified under Recommendation 1-6 and Recommendations 2-1 through 3-4. To the extent practicable, SPLB will assess the confirmation issues as part of and integral to the reviews and assessments performed under Recommendation 1-6 and 2-1 through 3-4. Any confirmation issue that is not fully assessed and disposed of during these reviews will be scheduled for review as resources allow.

Independent of the reassessment report, NRR staff reviewed shift staffing practices at nuclear power plants (SECY-93-184, June 29, 1993) and is monitoring plant events with respect to the sufficiency of licensee shift staffing and task allocation. The results of these efforts will be considered, as appropriate, when Recommendation 3-5 is addressed.

PART IV OTHER ISSUES

This part of the FP-TAP identifies issues for staff action that are related to the fire protection program reassessment, but that were not specifically identified in the reassessment of the NRC fire protection report of February 27, 1993.

LESSONS LEARNED

Issue: In a memorandum of August 17, 1992, to J. Taylor, EDO, the Commission requested that the staff address several issues raised in the OIG's report on the staff's review and acceptance of Thermo-Lag fire barrier material. In a memorandum to J. Taylor, EDO, of August 21, 1992, T. Murley, NRR, stated that the staff would apply the lessons learned from the fire protection program reassessment to other NRR programs and would include corrective actions for programmatic improvements if necessary. Responsibility for

this assessment was assigned to PMAS. (This activity is also being tracked as WITS Item 9200200.)

Scope: To determine the applicability of the lessons learned from the staff reassessment of the fire protection program to other NRR technical areas.

Staff effort: One year.

Tech assistance: \$250K.

Duration: 18 months.

Completion date: December 1994.

Status: Started.

This assessment is being performed by NRR/PMAS. As outlined in the memorandum of June 29, 1993, PMAS developed an action plan to identify the lessons learned from the fire protection reassessment and determine their applicability to other NRR technical areas. The staff has developed an evaluation criteria and a scope of review to evaluate the staff's handling of past NRR technical issues. A contract with INEL to perform the screening evaluations is in place. The technical assistance resources may be increased in the near future due to a better definition of the work load recently completed.

PMAS staff drafted NRR Office Letter 116, "Procedures for Implementation of New Requirements," which provides guidance for the periodic management review of implementation of new requirements. This office letter is in the final stage of management review.

Application of lessons learned to the qualification testing of electrical equipment is addressed in the Equipment Qualification Task Action Plan (WITS Item No. 9300107).

GANTT CHART

The attached Gantt chart shows the recommendations with the scheduled duration for completion and the completion status.

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FIRE PROTECTION TASK ACTION PLAN (FP-TAP)

Attachment

Task Name	1993	1994	1995	1996	1997
PART I - MAJOR RECOMMENDATIONS	Started				
R.1-1 APPENDIX R REVISION	Started				
R.1-2b OTHER FIRE BARRIERS	Started				
R.1-3 MANAGEMENT INFO. SYSTEM	Started				
R.1-4 RESOURCES FOR TL/FP-TAP	Done				
R.1-5 DEVELOP TRAINING PROGRAM	Future				
R.1-6 INSPECTION COORDINATION	Future				
R.1-7 ELEC. LOAD MANAGEMENT	Started				
R.1-8 REASSESS "FIVE" METH.	Started				
PART II - REC. FURTHER STUDY	Future				
R.2-1 BIOFOULING	Future				
R.2-2 S/D OPERABILITY REQ.	Future				
R.2-3 FIRE BARRIERS SURV.REQ.	Future				
R.2-4 FIRE BARRIER RELIABILITY	Future				
PART III - CONFIRMATION ISSUES	Future				
R.3-1 MANUAL FIRE FIGHTING	Future				
R.3-2 CONTROL SYST.INTERACTION	Future				
R.3-3 EQUIPMENT PROTECTION	Done				
R.3-4 FLAMMABLE GAS LINES	Future				
R.3-5 REMAINING ISSUES	Future				
PART IV - LESSONS LEARNED	Started				