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September 21, 1980

The Honorable Tom Bevill, Chairman  
Subcommittee on Energy and Water  
Development  
Committee on Appropriations  
United States House of Representatives  
Washington, D. C. 20515

Dear Mr. Chairman:

House Report 96-1093, regarding the Energy and Water Development Appropriations Bill for FY 1981, directed the Nuclear Regulatory Commission to provide a monthly report on the status of its efforts to carry out its licensing and regulatory duties. As indicated in the House Report, the considerations leading to this request concern the efforts of the Office of Nuclear Reactor Regulation to (1) complete the high priority work necessary to incorporate the lessons learned from the Three Mile Island accident into the Commission's licensing and regulatory process in an orderly and systematic manner, and (2) initiate and complete the necessary reports and studies so the Commission can consider pending applications for operating licenses, construction permits and other licensing actions according to the April 17, 1980 testimony before the Committee.

In response to the Committee's direction, the first monthly status report is enclosed. The report provides a discussion of the TMI Action Plan developed to incorporate the lessons learned from the Three Mile Island accident into the licensing and regulatory process, including a discussion on the implementation of the short-term requirements of the Action Plan into operating reactors and near-term operating license applications.

The report also discusses the progress made since April 17, 1980 in the licensing of new plants and provides an updated schedule for the review of operating license applications. Other licensing activities discussed include emergency preparedness, equipment qualification, operator licensing and the hearing on TMI-1 restart. Information is also provided on the reasons for the delay in resuming the review of construction permit applications, the reasons for the delays in licensing nearly completed plants, and the status of TMI-2 cleanup operations.

OFFICE ▶						
SURNAME ▶						
DATE ▶						

The Honorable Tom Bevill

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Please advise us if you have any questions regarding this report.

Sincerely,

Original Signed by  
John F. Ahearne

John F. Ahearne  
Chairman

Enclosure:  
NRR First Monthly Status  
Report to Congress

cc: The Honorable John T. Meyers

Cleared with all Cmrs.' Offices by SECY  
Ref.-SECY-80-508  
Typed in final in NRR based on Chairman's comments.

Originating Office: EDO/NRR

OFFICE	SECY	SECY	OCA
SUMMARY	MMcGregor	TCombs <i>TC</i>	EFaye
DATE	11/21/80	11/21/80	11/21/80

NRR MONTHLY STATUS REPORT TO CONGRESS

In House Report 96-1093, regarding the Energy and Water Development Appropriations Bill for FY 1981, the Subcommittee on Energy and Water Development directed the NRC to provide a monthly report on the status of efforts to carry out its licensing and regulatory duties. As indicated in the House Report, the considerations leading to this request concern the efforts of the Office of Nuclear Reactor Regulation to (1) complete the high priority work necessary to incorporate the lessons learned from the Three Mile Island (TMI) accident into the Commission's licensing and regulatory process in an orderly and systematic manner, and (2) initiate and complete the necessary reports and studies so the Commission can consider pending applications for operating licenses, construction permits and other licensing actions in accordance with the April 17, 1980 testimony before the committee.

The following is the first NRR monthly status report on those topics and covers the period from April 17, 1980 to November 15, 1980. It includes a description of the TMI Action Plan and highlights the related efforts being performed both on operating reactors and on licensing new facilities. Attachment 1 provides a list of NRR major actions since April 17, 1980.



TMI Action Plan -- Overview

The NRC Action Plan resulting from the accident at Three Mile Island (NUREG-0660), approved by the Commission and issued in May 1980, was developed to provide a comprehensive and integrated plan for the actions judged necessary by the Nuclear Regulatory Commission to correct or improve the regulation and operation of nuclear power plants. It applies directly to both operating plants (OR) and plants undergoing operating license (OL) review. The Action Plan was based on experience from the accident at TMI-2 and the official studies and investigations of the accident. Those groups who have investigated the accident include the Congress, the General Accounting Office, the President's Commission on the Accident at Three Mile Island, the NRC Special Inquiry Group, the NRC Advisory Committee on Reactor Safeguards (ACRS) and various internal NRC task forces.

All the investigations agreed that significant weaknesses existed in the broad general area which is called operational safety in the Action Plan. Operational safety includes the technical qualifications, training, and organization of the licensee's operating staff, as well as the inspection and licensing by NRC of both the operating staff and the management of the plant. The general conclusion is that these areas, which reflect the human element in reactor operation and safety, have been underemphasized in the past relative to nuclear plant components, equipment, systems and structures.

Although operational safety merits primary emphasis, means of improving current plant designs were also identified in studies of the accident and are not being overlooked. The accident reemphasized the importance of high system reliability. Therefore, the Action Plan contains requirements for the assessment of the reliability of some safety systems and features (e.g., auxiliary feedwater, emergency core cooling, containment isolation, and decay-heat removal, including natural circulation) and an overall assessment of accident probabilities and consequences using simplified reliability techniques for all plants. These analyses are directed toward identifying and correcting specific shortcomings in current plant designs.

In addition to the weaknesses in nuclear plant operation and design, the state of planning and preparedness for emergencies at nuclear power plants was identified as inadequate. This condition apparently resulted from the low priority assigned to emergency planning by NRC and its licensees, a lack of definition of the NRC role in emergencies, and insufficient coordination between licensees, NRC, and the other Federal, State and local agencies involved. A major action in this area that has already been accomplished is the centralization of emergency planning and response in a single federal agency - the Federal Emergency Management Agency (FEMA).

Another major action is the requirement to include better plans and on-site facilities to handle emergencies, including improvements in the organizations of on-site personnel for handling emergencies, the improvement of emergency plans for off-site action by the utility and by State and local governments, and improvement in the emergency response capability of the NRC.

In the development of the TMI Action Plan, NRC has transformed the general recommendations of the many review groups into discrete, scheduled tasks that specify changes (or studies that may result in future changes) in its regulatory requirements or its organization and procedures. The plan also identifies the organizational elements in NRC responsible for the various actions and contains estimates of the resources and schedule necessary for both NRC and the industry to accomplish the actions. As is the nature of any plan, the actions, resources and schedules in the near term are more likely to be accurate than are those for the long term. Changes in the specified actions will be made as necessary to reflect new information and will be reported in these monthly updates.

Some actions to improve the safety of nuclear power plants now operating were judged to be necessary immediately after the accident and could not be delayed until an action plan was developed. Those actions, however, were subsequently included in the Action Plan. Such actions came from the

Bulletins and Orders issued by the Commission immediately after the accident, the first report of the Lessons-Learned Task Force issued in July 1979, the recommendations of the Emergency Preparedness Task Force and the NRC staff and Commission. Before these immediate actions were applied to operating plants, they were approved by the Commission.

The Action Plan also contains other items for which the scope and criteria are sufficiently well-defined in the plan that additional study is not required. Commission approval of the plan means, for these items, that implementation should proceed expeditiously, consistent with a policy to solicit and consider public comments on these and any other TMI-related requirements developed in accord with the plan. This policy has impacted the estimated implementation deadlines originally shown in the plan for some of these items.

In addition, the Action Plan contains studies of the desirability of additional requirements and safety systems to reduce the risk from accidents in which there is significant melting or degradation of the core, such as occurred during the accident at TMI. For example, the plan includes continuation of the NRC work of modifying its siting requirements to reestablish distance between population centers and reactors as a primary safety feature. The plan also contains interim improvements and rulemaking

on the capability of nuclear power plants to mitigate the consequences of accidents in which the core is severely damaged, and a long-term study of the possibilities for mitigating accidents. For items involving study such as these, Commission approval of the plan means approval to commit the necessary staff resources, consistent with other resource priorities, to develop the information needed to bring the item separately to the Commission for a decision on the schedule shown in the plan. The interim improvements include inerting small containments to avoid hydrogen burning and explosions, reducing the possible leakage of highly radioactive material, improving shielding to permit access to important areas, providing better means of sampling the reactor coolant and containment atmosphere, adding or increasing the range of instruments so that accident conditions can be monitored, and providing the operating staff with training in the capability and use of the currently installed systems.

Items that are related to, but not directly derived from, the TMI-2 accident, and are more properly characterized as part of the agency's normal operating plan, are included in the plan for completeness. These items are to be scheduled and assigned resources along with the other normal functions of the agency in its normal operating plan and budgetary process.

Recently the Commission approved a modification to the TMI Action Plan to:

- (a) issue certain approved requirements not previously issued,
- (b) convert the general intent of each Action Plan topic into a more specific requirement that utilities can readily implement.
- (c) clarify, and in some cases, revise the scope of previously issued requirements from Action Plan items,
- (d) revise implementation schedules that appear impractical to accomplish, and
- (e) develop an overall approach for scheduling the implementation of a large number of items in such a way as to not require unnecessary shutdowns at each operating reactor several times a year.

The above clarifications and changes, published as NUREG-0737, were transmitted to all licensees and holders of construction permits on November 10, 1980.

With regard to construction permit reviews, the staff has developed a proposal with respect to the TMI-related requirements that should be considered in these reviews. This proposal, with alternate approaches, was issued in October 1980 for public comment. The final Commission position will be determined after receipt of public comments. Following Commission decision, further case-specific action to include the TMI-related requirements can be undertaken by CP applicants, and the NRC staff, boards and panels. A further discussion of the delay in processing CP applications is provided in Attachment 2.

### Operating Reactors

Within NRR, efforts on operating reactors continue to receive first priority for resources. (It should be noted that, as of November 1, 1980, the total manpower within NRR is about 50 people below the authorized ceiling, due to some extent to the partial freeze on hiring and the time required to fill vacancies.) Major issues receiving staff attention on operating reactors include implementation of the short-term lessons learned requirements within the TMI Action Plan, emergency preparedness and qualification of safety-related electrical equipment.

The effort on implementation of the short-term lessons learned requirements has required a significant amount of staff resources. In addition to the review of the licensees' submittals in response to these requirements, the effort included a number of meetings with the licensees to discuss and, where appropriate, clarify the requirements, as well as to discuss the licensees' responses to the requirements. Most of the short-term lessons learned requirements have now been implemented on the operating reactors.

With regard to emergency preparedness, the staff has been evaluating operating reactor licensee plans to the upgraded requirements recently defined in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power



Plants". This effort has included a number of meetings with the licensees to discuss the upgraded requirements as well as the licensees' responses to these requirements. In this regard, more detailed criteria for the emergency response facilities, defined in NUREG-0696, will be issued shortly to all licensees with a request that a conceptual design of the facilities to these criteria be submitted for NRC review 60 days after issuance.

On the qualification of safety-related electrical equipment, the staff is currently making an assessment of the degree of conformance of licensee equipment to the current qualification requirements endorsed by the Commission. These requirements were defined by a Commission Order dated May 23, 1980, in which the staff was directed to complete its assessment of this matter by February 1981. In response to a subsequent order, dated September 19, 1980, all licensees have provided information regarding the qualification of their equipment in order to assist the staff in its assessment.

One other area within operating reactors which is requiring a significant amount of staff resources concerns the effort on the hearing regarding the restart of the TMI-1 facility. Over 100 contentions have been admitted to the proceeding primarily on the subjects of emergency planning, financial qualifications, management capability and adequacy of plant design (including Class 9 accident considerations). The preparation of testimony for these contentions, some of which cover issues not previously considered in the licensing process, and participation in the hearing require a large commitment



of staff resources. The hearing, which is now in progress, is estimated to take between five to seven uninterrupted months to complete. With regard to TMI-2, Attachment 3 provides a status of cleanup activities, including a schedule and a discussion of potential delays and unresolved items.

As required by Section 110 of Public Law 96-295, NRR is currently working on a plan for operating reactors to (1) identify each current rule and regulation compliance with which the Commission determines to be of particular significance to the protection of the public health and safety and (2) determine the extent to which each operating plant complies with these identified rules and regulations. In September 1980, a status report of the efforts to develop such a plan was sent to Congress. In December 1980, the staff plans to issue for public comment a list of rules and regulations which are considered potentially significant to the protection of the public health and safety. The staff also plans to revise the Standard Review Plan to appropriately reflect all safety rules and regulations.

The scope of review for operator licensing has increased significantly due to a larger scope in the exams given and more exams required. This increased scope requires additional resources to accomplish the work and the manpower currently available is about 15 PMY short of that required. The major impact of this shortage is the ability to process exams for replacement operators in operating reactors.

Attempts during the past several months to hire additional examiners have not been fruitful (less than a 10 percent acceptance rate). Although this hiring effort will continue (within the constraints of the hiring freeze), the effects of a successful effort would not be felt for about six months, since the new hires would have to be assimilated into the program. Therefore, consideration is being given to contracting for additional examiners through the National Laboratories. NRR management is giving continued attention to this problem area in order to minimize its effects.

#### Licensing - Casework

The highest priority within the reactor licensing activities of NRR (i.e., excluding operating reactors) is given to operating license (OL) reviews, with the emphasis on the near term OL applications. The major effort in this area has been to assure that the TMI-related requirements for near-term OL applications have been met prior to issuing new operating licenses.

As with operating reactors, this effort also included a number of meetings with each license applicant to discuss and, where appropriate, clarify the requirements, as well as to discuss its responses to the requirements. Several site visits were also held to verify the adequacy of implementation of the requirements by (1) checking hardware installation, (2) reviewing specific administrative procedures relating to operating personnel and accident response, (3) evaluating the on-site and off-site support centers and their staffing, (4) evaluating the installed communications system between the plant and the NRC Incident Response Center, (5) reviewing the

applicant's management organization and managerial capabilities, and (6) evaluating the design of the control room. The results of all of these reviews and evaluations were then documented in a staff report.

Other OL applications are also receiving staff attention. In addition to the review of the implementation of TMI-related requirements, the next series of OL applications require resources to resolve difficult technical problems in other areas; e.g., review of the seismic design criteria for San Onofre, Unit 2 and Summer, Unit 1 and review of LaSalle, Unit 1 as the lead BWR Mark II OL application.

Since the testimony given before the Subcommittee on Energy and Water Development on April 17, 1980, three fuel load and low power licenses (North Anna, Unit 2, Salem, Unit 2 and Farley, Unit 2) and two full power operating licenses (North Anna, Unit 2 and Sequoyah, Unit 1) have been issued. Commission action is expected to be completed within the next several months on one additional fuel load and low power license (McGuire, Unit 1) and two additional full power licenses (Salem, Unit 2 and Farley, Unit 2).

The staff has recently (October 1980) reassessed the target milestone dates provided with the April 17, 1980 testimony in order to include, more realistically, additional time for public hearings and subsequent Commission action, and also to consider any changes in the projected construction completion dates for the various facilities. During this reassessment, an additional 18 plants were added to the list to reflect expected operating

license activity through 1985. The new list is provided as Attachment 4. Changes to the milestone dates for three of the plants (Salem, Unit 2, LaSalle, Unit 1 and Summer, Unit 1) have been noted on Attachment 4 to reflect the status as of November 15, 1980.

The results of the above reassessment indicate that the target date for OL issuance has changed for 29 plants, most of which were due to delays in the completion of plant construction. Also the number of impacted plants (licensing complete after expected completion of major items of construction) has increased from three to five (Diablo Canyon, Units 1 and 2, Summer, Unit 1, LaSalle, Unit 1 and San Onofre, Unit 2). The amount of the current impacts range from 2 months for Summer, Unit 1, to 10 months for San Onofre, Unit 2. A discussion of the reasons for the delays is included as Attachment 5.

Attachments:

1. List of NRR Major Actions Since April 17, 1980
2. Delay in Processing CP Applications
3. Current Status of Cleanup Operations at Three Mile Island, Unit 2
4. Updated Target Milestones for OL Reviews
5. Impacted OL Reviews

ATTACHMENT 1

LIST OF NRR MAJOR ACTIONS

SINCE APRIL 17, 1980

- 4/80 Issued fuel load licenses to North Anna, Unit 2 and Salem, Unit 2.
- 5/80 Issued NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident".
- 5/80 Issued NUREG-0662, "Final Environmental Assessment for Decontamination of the Three Mile Island, Unit 2 Reactor Building Atmosphere", which presents a discussion of the information considered by the NRC staff in arriving at its recommendation that the preferred and safest method for processing the Kr-85 in the reactor building is by controlled purging.
- 6/80 Issued NUREG-0694, "TMI-Related Requirements for New Operating Reactors".
- 7/80 Issued Notice of Proposed Rulemaking regarding, "Modification of the Policy and Regulatory Practices Governing the Siting of Nuclear Power Plants".
- 7/80 Issued NUREG-0683, "Draft Programmatic Environmental Impact Statement Related to Decontamination and Disposal of Radioactive Wastes Resulted from March 28, 1979 Accident at Three Mile Island Nuclear Station, Unit 2", which is an overall study of the activities necessary for decontamination of the facility, defueling, and disposition of the radioactive wastes which resulted from the accident.
- 7/80 Issued NUREG-0698, "NRC Plan for Cleanup Operations at Three Mile Island Nuclear Station, Unit 2", which defines the functional role of the NRC in cleanup operations at TMI-2 to assure that the NRC regulatory responsibilities and objectives will be fulfilled.
- 8/80 Issued New Rule on Emergency Preparedness.
- 8/80 Issued full power license to North Anna, Unit 2.
- 9/80 Issued full power license to Sequoyah, Unit 1.
- 9/80 Issued to Congress a status report on plan to implement the requirements of Section 110 of Public Law 96 - 295.

- 10/80 Issued fuel load license to Farley, Unit 2.
- 10/80 Issued NUREG-0718 for comment, which proposes the licensing requirements for pending construction permit applications.
- 10/80 Issued Advance Notice for Rulemaking regarding degraded core cooling requirements and an interim rule for comment.
- 10/80 Issued NUREG-0735, which provides a Commission approved plan for developing a safety goal.
- 11/80 Issued NUREG-0737, which provides clarification and changes to portions of the TMI Action Plan (NUREG-0660).
- 11/80 Issued NUREG-0654 which provides the Commission approved criteria for preparation and evaluation of Emergency Response Plans.

ATTACHMENT 2



## DELAY IN PROCESSING CP APPLICATIONS

Since the TMI-2 accident, a significant portion of our resources have been concentrated on identifying the lessons to be learned from that accident and the associated requirements that are necessary and sufficient for the continued operation of licensed facilities and for the issuance of new operating licenses. That effort culminated with the issuance of the Commission's TMI Action Plan, which is discussed in the body of this monthly status report, and resulted in the resumption of licensing for pending OL applications.

Subsequently members of the NRC staff have been working to adapt the Commission's TMI Action Plan to the six pending CP applications involving eleven plants (Black Fox, Units 1 and 2; Allens Creek, Unit 1; Pilgrim, Unit 2; Perkins, Units 1, 2 and 3; Pebble Springs, Units 1 and 2; and Skagit, Units 1 and 2). Several meetings with the six CP applicants, as an owners group, have been held on this subject. The NRC staff and the owners group have also met with the ACRS and the NRC staff has met with the Commission. Following these meetings and at the direction of the Commission, the staff issued NUREG-0718, "Proposed Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License," in August 1980. That report sets forth the proposed manner and extent to which the TMI Action Plan should be applied to the pending CP applications prior to the issuance of a CP. NUREG-0718 was noticed in the

Federal Register on October 2, 1980 as a proposed rulemaking. The comment period expired November 17, 1980. Following the comment period, the Commission will make a final decision on the report. At that time, further case-specific action on TMI-related requirements can be undertaken by CP applicants and the NRC staff. Also, the associated proceedings on those pending CP applications can then be reactivated.

With respect to the resources to complete the licensing efforts on those eleven plants, the Office of Nuclear Reactor Regulation has budgeted about 12 staff years to complete these CP case reviews in this fiscal year and 10 staff years in each subsequent fiscal year through 1983. These resources will be supplemented, as appropriate, from available contractual assistance funds. The Commission currently believes that the budgeted staff resources are sufficient to proceed with the pending CP applications.

ATTACHMENT 3

CURRENT STATUS OF CLEANUP OPERATIONS

AT THREE MILE ISLAND, UNIT 2

At the present time, the TMI-2 reactor is being maintained in a safe shutdown condition, with a substantial shutdown margin provided by boron dissolved in the primary coolant water. Decay heat is being removed by cyclic natural recirculation, with the "A" steam generator in the steaming mode to the main condenser.

Significant cleanup and recovery activities since April 1980 include the following:

- (1) The decontamination of the TMI-2 reactor building atmosphere was completed on July 11, 1980 by controlled purging of krypton-85 from the building atmosphere.
- (2) Three manned entries have been made into the reactor building to obtain information on conditions within the building.
- (3) Processing of the inventory (500,000 gallons) of accident generated waste water, contained in the TMI-2 auxiliary building tanks, was completed on August 12, 1980.

- (4) The decontamination of the contaminated surfaces in the auxiliary and fuel handling buildings is approximately 65% complete.

Barring any unforeseen emergency situations, the staff does not anticipate additional major cleanup activities until the final Programmatic Environmental Impact Statement (PEIS) is issued. The draft PEIS (NUREG-0683) is currently out for public comment and the final PEIS is expected to be issued by the end of March 1981. The next major planned activities include the processing of the reactor building sump water (600,000 gallons) and the reactor coolant system waste water (95,000 gallons).

On August 1, 1980 the licensee issued a revised TMI-2 cleanup cost estimate, including an updated schedule for recovery activities. This schedule is provided in Table 1. However, there is considerable uncertainty associated with this schedule due to the following considerations.

On September 12, 1980, the licensee notified the NRC that they would initiate a 50% reduction in TMI-2 expenditures and activities in view of the recent action by the Pennsylvania Public Utility Commission (PPUC) to deny the request of Metropolitan Edison Company (licensee) for emergency rate relief.

This action will hamper the licensee's ability to maintain the current level of cleanup effort for the TMI-2 facility. Additionally, on September 18, 1980, the PPUC ordered the licensee to cease and desist from using any operating revenues for uninsured cleanup and restoration costs. These actions will undoubtedly impact the milestones listed in Table 1.

There is also considerable uncertainty regarding the disposition of solid radioactive waste generated from TMI-2 cleanup activities. The Governor of South Carolina has prohibited the burial of any accident-related solid waste at the Barnwell, South Carolina shallow land burial site. Also, a referendum was recently approved in the State of Washington which prohibits the burial of TMI-2 waste at the Richland, Washington site after July 1981. Further, the future availability of the only remaining shallow land burial site, located in Beatty, Nevada, is also uncertain.

There will also be high-level solid waste generated from cleanup activities which will be unsuitable for burial at any shallow land burial facility. The disposition of these wastes is uncertain although the NRC is working closely with DOE to find an acceptable means and location for processing the waste for ultimate disposition or storage at a suitable facility.

Table 1

Schedule for Major Milestones for TMI-2 Cleanup Actions

Decontamination of Auxiliary & Fuel Handling Building Area & Sump	January 1980 - July 1981
Decontamination of Reactor Building	June 1981 - May 1982
Cleanup of Containment Sump & Reactor Coolant System (RCS) Water	March - July 1981
Examination of Reactor and Core	February - September 1982
Removal of Reactor Head	May - July 1982
Preparation for and Removal of Fuel	July 1982 - July 1983
*Decontamination of RCS and Removal of Reactor Internals	November 1982 - December 1983

\*Includes additional containment and equipment decontamination

ATTACHMENT 4



UPDATE OF APRIL 1980 TARGET SCHEDULES

AS OF OCTOBER 1980

In preparing testimony for the House Appropriations Subcommittee in April, it was necessary to develop target schedules for forty plants identified by the Committee. The target schedules were developed such that the license review process would be completed, through hearings when necessary, so as not to impact the construction completion date estimated by the staff.

In developing the target schedules, in April, the projected safety reviews were based on a 33 month schedule from docketing through OL issuance, including time for ACRS review and hearings. For plants under OL review the target schedules were developed, based on the NRC construction completion dates, on a plant specific basis to minimize delays in OL issuance. The average hearing time from start to OL issuance of 5 months was assumed. In addition, the staff did not consider the affect of the Commission's Immediate Effectiveness Policy on the target schedules.

In developing the update (October) of these target schedules the following steps were followed:

- (1) The original forty plants were listed, in addition eighteen plants for which OL's are expected to be issued by 1985 were added to the list.
- (2) In a July 11, 1980 letter from the Division of Licensing all operating license applicants and holders of construction permits were requested to provide their latest estimates of construction completion dates. In most instances construction delays were reported.
- (3) The data received in response to this request were forwarded to the Caseload Forecast Panel. Using these data, information available from site visits and model analysis, a new listing for construction completion dates was prepared (September 23, 1980).
- (4) Starting with the NRC estimate of construction completion the target schedules were updated. The target schedules were developed using the assumptions appended to Enclosure 1. Two significant differences in these assumptions from those used in April exist. First, the April schedules assumed an average hearing of five months when required. The updated schedules attempt to differentiate between 5 months from SSER to decision for a moderately contested hearing and 9 months from SSER to decision for a heavily contested hearings. A heavily contested hearing was assumed for Midland, Limerick, Shoreham, Seabrook, Diablo Canyon and San Onofre. Second, the updated target schedules specifically provide for the Commission's policy regarding the

immediate effectiveness rule. For plants with no hearings one month for decision is assumed; for plants with moderately contested hearings two months for decision was assumed and for plants with heavily contested hearings three months for decision was assumed.

- (5) Based on the above steps the target schedules in Enclosure 1 were developed.

In summary some pertinent facts regarding a comparison of the April and October target schedules follow:

- |   |    |
|---|----|
| o No. of plants in April list   | 40 |
| o No. of plants added in October list   | 18 |
| o Changes in October vs April list for Original 40 plants;  |    |
| - Completed on/before schedule  | 2  |
| - Changed OL issue dates  | 29 |
| - No change   | 9  |
| o While additional time for hearing and immediate effectiveness policy was assumed, most slips in construction completion were large enough to accommodate new assumptions. For the original forty plants, 26 of the 29 changes in OL issue dates were due to new estimates of construction completion dates (later in most instances). |    |
| o The number of impacted plants has increased from 3 to 5. An impacted plant is one for which the projected OL issuance date (either a low power license or a full power license, whichever comes first) is later than the staff's estimated date for construction completion.  |    |

IMPACTED PLANTS

Plant	CC*	<u>APRIL SCHEDULE</u>			<u>OCTOBER SCHEDULE</u>		
		<u>OL Issue</u>	<u>(Delay (Mos.))</u>		<u>CC</u>	<u>OL Issue</u>	<u>Delay (Mos.)</u>
** Summer 1	12/80	4/81	4		1/81	10/81	9
Diablo Canyon 1	5/80	10/80 (LP)	5		1/81	5/81 (LP)	4
San Onofre 2	5/81	6/81	1		7/81	5/82	10
*** LaSalle 1	12/80	12/80	0		12/80	3/81	3
Diablo Canyon 2	3/81	3/81	0		6/81	9/81	3

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\*CC=Construction Completion staff estimate

\*\* As of 11/15/80, the CC date for Summer 1 is projected for 8/81 representing a reduction of the impact to 2 months.

\*\*\* As of 11/15/80, the OL Issue date for La Salle 1 is projected for 4/81 representing a 4 month impact.

POOR ORIGINAL

TABLE 1  
TARGET DATES OF LICENSING STEPS FOR PLANTS  
SEEKING OPERATING LICENSES THROUGH 1985

Plant	FSAR		ER		SER	ACRS	SER* Suppl.	DHS	FES*	Hearing** Start	Comp. App. Est.	Const. Comp.*** HRC Est.	ASL0** Decision	IN Issued
	Tendered	Docketed	Tendered	Docketed										
<u>EAST CENTRAL AREA RELIABILITY COORDINATION AGREEMENT</u>														
Zimmer 1	5/75	9/75	6/75	9/75	1/79	3/79	7/81E	10/76	6/77	6/79	7/81E	11/81E	9/82	11/81E
Fermi 2	10/74	4/75	10/74	4/75	1/82E	2/82E	4/82E	7/81E	12/81E	5/82E 2/82E	7/82E 4/82E	11/82E	9/82	11/82E
Midland 2	8/77	11/77	3/78	4/78	7/82E	8/82E	10/82E	6/81E	11/81E	12/82E	4/83E	10/83E	7/83E	10/83E
Midland 1	8/77	11/77	3/78	4/78	7/82E	8/82E	10/82E	6/81E	11/81E	12/82E	4/83E	12/83E	7/83E	9/84E
Marble Hill	6/79	5/83E	6/79	6/84E	8/85E	9/85E	11/85E	3/85E	8/85E	12/85E	2/86E	6/86E	4/86E	6/86E
Perry 1	9/80	1/81E	6/80	4/81E	9/82E	10/82E	12/82E	1/82E	6/82E	1/83E	3/83E	5/83E	5/83E	7/83E
Beaver Valley 2	12/82E	2/83E	12/82E	2/83E	2/85E	3/85E	5/85E	12/84E	5/85E	6/85E	8/85E	12/85E	10/85E	12/85E
<u>ELECTRIC RELIABILITY COMMISSION OF TEXAS</u>														
Comanche Peak 1	3/78	5/78	3/78	1/79	4/81E	5/81E	7/81E	12/80E	5/81E	8/81E	10/81E	12/81E	2/82E	2/82E
Comanche Peak 2	3/78	5/78	3/78	1/79	4/81E	5/81E	7/81E	12/80E	1/81E	8/81E	10/81E	12/81E	2/84E	2/84E

Plant	FSAR		ER		SIR	ACRS	SER* Suppl.	DCS	FES*	Hearing** Start	Comp. App.	Const. Comp.*** Est. NRC Est.	ASLB*** Decision	OL Issued
	Tendered	Docketed	Tendered	Docketed										
<u>ELECTRIC RELIABILITY COUNCIL OF TEXAS (Cont'd)</u>														
<u>South Texas 1</u>	5/78	7/78	5/78	7/78	11/82E	12/82E	2/83E	4/82E	9/82E	3/83E	5/83E	9/83E	7/93E	9/83E
<u>South Texas 2</u>	5/78	7/78	5/78	7/78	11/82E	12/82E	2/83E	4/82E	9/82E	3/83E	5/83E	9/85E	7/83E	9/85E
<u>MID-ATLANTIC AREA COUNCIL</u>														
* <u>Salem 2</u>	8/71	8/71	7/71	7/71	10/74	2/79	4/80 (LP) 10/80E (FP)	10/72	4/73	None Req'd	4/80	4/80	N/A	4/80 (LP) 10/80E (FP)
<u>Susquehanna 1</u>	4/78	7/78	5/78	6/78	2/81E	3/81E	5/81E	6/79	1/81E	6/81E 3/81E	8/81E 5/81E	12/81E	10/81E	12/81E
<u>Susquehanna 2</u>	4/78	7/78	5/78	6/78	2/81E	3/81E	5/81E	6/79	1/81E	6/81E 3/81E	8/81E 5/81E	4/83E	10/81E	4/83E
<u>Limerick 1</u>	12/80	2/81E	12/80E	2/81E	8/82E	9/82E	11/82E	6/82E	11/82E	1/83E	5/83E	10/83E	8/83E	11/83E
<u>MID-AMERICA INTERPOOL NETWORK</u>														
** <u>LaSalle 1</u>	9/76	5/77	10/76	5/77	11/80E	12/80E	2/81E	3/78	11/78	None Req'd	12/80E	12/80E	N/A	3/81E
<u>LaSalle 2</u>	9/76	5/77	10/76	5/77	11/80E	12/80E	2/81E	3/78	11/78	None Req'd	12/81E	12/81E	N/A	12/81E
<u>Byron 1</u>	6/78	11/78	6/78	11/78	6/82E	7/82E	9/82E	12/81E	5/82E	10/82E 7/82E	12/82E 9/82E	4/83E	2/83E 2/83E	4/83E
<u>Byron 2</u>	6/78	11/78	6/78	11/78	6/82E	7/82E	9/82E	12/81E	5/82E	10/82E 7/82E	12/82E 9/82E	4/84E	2/83E 2/83E	4/84E

\* As of 11/15/80, the FP license issuance date for Salem 2 is projected for 1/81. The reasons are discussed in Attachment 5.

\*\* As of 11/15/80, all remaining milestone dates for La Salle 1 should reflect an additional one month delay. The reason is discussed in Attachment 5.



Plant	FSAR		ER		SER	ACRS	SER <sup>a</sup> Suppl.	DMS	FCS <sup>a</sup>	Near Final Start Comp.	Const. Comp. <sup>***</sup> App. Est. HHC Est.	ASL <sup>***</sup> Decision	OL Issued
	Tendered	Docketed	Tendered	Docketed									
<u>Matts Bar 1</u>	6/76	10/76	(3)	(3)	7/81E	8/81E	10/81E	6/78	12/78	None Req'd	11/81E	N/A	11/81E
<u>Matts Bar 2</u>	6/76	10/76	(3)	(3)	7/81E	8/81E	10/81E	6/78	12/78	None Req'd	8/82E	N/A	8/82E
<u>Summer 1</u>	12/76	2/77	12/76	2/77	12/80E	1/81E	3/81E	6/79	1/81E	4/81E 2/81E	12/80E	8/81E 4/81E	10/81E
<u>Farley 2</u>	8/73	8/73	8/73	8/73	5/75	6/75	10/80E (LP) 12/80E (FP)	7/74	12/74	None Req'd	10/80E	N/A	10/80E (LP) 1/81E (FP)
<u>Bellefonte 1</u>	2/78	6/78	2/78	6/78	2/84E	3/84E	5/84E	2/82E	7/82E	None Req'd	6/84E	N/A	6/84E
<u>Bellefonte 2</u>	2/78	6/78	2/78	6/78	2/84E	3/84E	5/84E	2/82E	7/82E	None Req'd	2/85E	N/A	2/85E
<u>Catawba 1</u>	3/79E	2/81E	3/79	2/81E	12/82E	1/83E	3/83E	5/82E	10/82E	4/83E	8/83E	8/83E	10/83E
<u>Catawba 2</u>	3/79	9/80E	3/79	2/81E	12/82E	1/83E	3/83E	5/82E	10/82E	4/83E	2/85E	8/83E	2/85E
<u>St. Lucie 2</u>	3/80	12/80E	3/80	12/80E	2/83E	3/83E	5/83E	7/81E	12/81E	6/83E	11/82E	10/83E	12/83E
<u>Harris 1</u>	6/81E	8/81E	6/81E	8/81E	8/83E	9/83E	11/83E	8/83E	11/83E	12/83E	2/84E	4/84E	6/84E
<u>Vogtle 1</u>	8/82E	10/82E	8/82E	10/82E	10/84E	11/84E	1/85E	8/84E	1/85E	2/85E	11/84E	6/85E	8/85E
SOUTHEAST POWER POOL													
<u>Grand Gulf 1</u>	4/78	6/78	4/78	6/78	4/81E	5/81E	7/81E	2/81E	7/81E	None Req'd	8/81E	N/A	8/81E
<u>Grand Gulf 2</u>	4/78	6/78	4/78	6/78	4/81E	5/81E	7/81E	2/81E	7/81E	None Req'd	8/85E	N/A	8/85E
<u>Waterford 3</u>	9/78	12/78	9/78	12/78	9/81E	10/81E	12/81E	3/81E	8/81E	1/82E	7/82E	5/82E	7/82E

\* As of 11/15/80, the NRC projection for construction completion has been revised to 8/81.



Plant	FSAR		ER		SER	ACRS	SER <sup>+</sup> Suppl.	DES	FES <sup>*</sup>	Hear'g <sup>o</sup> Start	Comp. App.	Const. App. Est.	Comp. <sup>o</sup> HHC Est.	ASB <sup>o</sup> Decision	OK Issued
	Tendered	Booketed	Tendered	Booketed											
<u>SOUTHWEST POWER POOL (Cont'd)</u>															
<u>Wolf Creek</u>	2/80	8/80	2/80	10/80E	12/82E	1/83E	3/83E	5/82E	10/82E	4/83E	6/83E	10/82E	10/83E	8/83E	10/83E
<u>River Bend 1</u>	11/80E	5/81E	11/80E	5/81E	12/84E	1/85E	3/85E	6/82E	11/82E	4/85E	6/85E	3/84E	10/85E	8/85E	10/85E
<u>WESTERN SYSTEMS COORDINATING COUNCIL</u>															
<u>Diablo Canyon 1</u>	10/73	10/73	8/71	8/71	10/74	7/78	8/80E(LP) 3/81E(FP)	12/72	5/73	10/77 12/76	11/80E 12/76	1/81E	1/81E	2/81E	5/81E(LP) 9/81E(LP)
<u>Diablo Canyon 2</u>	10/73	10/73	8/71	8/71	10/74	7/78	3/81E(FP)	12/72	5/73	10/77 12/76	11/80E 12/76	6/81E	6/81E	2/81E	9/81E
<u>San Onofre 2</u>	11/76	3/77	11/76	3/77	2/81E	3/81E	5/81E	11/78	10/80E	7/81E 12/80E	11/81E 2/81E	4/81E	7/81E	2/82E	5/82E
<u>San Onofre 3</u>	11/76	3/77	11/76	3/77	2/81E	3/81E	8/81E	11/78	10/80E	7/81E 12/80E	11/81E 2/81E	4/82E	10/82E	2/82E	10/82E
<u>WNP 2</u>	3/77	6/78	12/76	4/77	3/82E	4/82E	6/82E	1/82E	6/81E	None Req'd	7/82E	7/82E	7/82E	N/A	7/82E
<u>WNP 1</u>	12/81E	2/82E	12/81E	2/82E	2/84E	3/84E	5/84E	12/83E	5/84E	6/84E	8/84E	12/84E	12/84E	10/84E	12/84E
<u>WNP 4</u>	12/81E	2/82E	12/81E	2/82E	2/84E	3/84E	5/84E	12/83E	5/84E	6/84E	8/84E	12/85E	12/85E	10/84E	12/85E
<u>WNP 3</u>	12/81E	2/83E	12/82E	2/83E	2/85E	3/85E	5/85E	12/84E	5/85E	6/85E	8/85E	12/85E	12/85E	10/85E	12/85E
<u>Palo Verde 1</u>	10/79	6/80	12/79	6/80	2/82E	3/82E	5/82E	7/81E	12/81E	6/82E	8/82E	11/82E	12/82E	10/82E	12/82E





FOOTNOTES FOR TABLE 1

E Denotes estimated date

\* Date entered is for last supplement to SER/FES issued.

\*\* Where two entries are made, first entry concerns radiological safety matters and second concerns environmental matters. A single entry indicates Hearing and/or ASLB decision considered both radiological and safety matters.

\*\*\* The applicant's estimates for construction completion are based on responses to the NRC request in a letter to all applicants dated July 11, 1980. The difference in estimates for construction completion, between the applicant and NRC, is attributable to an independent assessment by the NRC staff of factors affecting construction completion. Generally, the NRC staff estimates are more conservative, (i.e., later completion dates) and are based upon actual experience in constructing similar plants. Second unit of a dual unit facility is usually completed about 18 months after first unit.

(LP) Denotes low power

(FP) Denotes full power

(1) Environmental reviews for Sequoyah 1 and 2 were conducted under a lead agency agreement with TVA. TVA's final environmental statements (FES) incorporated and addressed the AEC's comments on the respective draft statements. The FES's were then accepted as the NEPA statements for the project.

(2) Schedule shown for McGuire 1&2 assumes hearing record will not be reopened for TMI-2 issues. If ASLB reopens record, full power OL issuance may be delayed.

(3) TVA's FES for Watts Bar 1 and 2 were considered to be the environmental report submitted to NRC. NRC then issued its own DES and FES for the project.

For the environmental review, the following increments were used in developing schedules:

A. DES to FES	5 months
B. FES to start of environmental hearing	2 months
C. Duration of hearing	2 months
D. End of hearing to Decision	2 months

Schedules for near term OL's were adjusted on a plant specific basis.

ASSUMPTIONS USED FOR PROJECTING TARGET SCHEDULES

Target schedules were developed beginning with the NRC estimate for construction completion date. This completion date was assumed to coincide with the operating license issue date. From this date, the schedule was developed using the following increments:

A. SER to ACRS meeting	1 month
B. ACRS to SSER issued	2 months
C. SSER to start of hearing, for a plant with...	
(1) No hearing	0 month
(2) Moderately contested hearing	1 month
(3) Heavily contested hearing	2 months
D. Hearing duration	
(1) No hearing	0 month
(2) Moderately contested hearing	2 months
(3) Heavily contested hearing	4 months
E. End of hearing to ASLB Decision	
(1) No hearing	0 month
(2) Moderately contested hearing	2 months
(3) Heavily contested hearing	3 months
F. Decision to Commission action	
(1) No hearing	1 months
(2) Moderately contested hearing	2 months
(3) Heavily contested hearing	3 months

ATTACHMENT 5

### IMPACTED OL REVIEWS

There are currently five plants (Diablo Canyon, Units 1 and 2, Summer, Unit 1, LaSalle, Unit 1 and San Onofre, Unit 2) for which the licensing effort is expected to be completed after the completion of the major items of construction. The amounts of the impact are shown in Attachment 4. In addition, the date for issuing a full power license to Salem, Unit 2 (which was issued a fuel load license in April 1980), is now projected for January 1981. The following discussions present the reasons for the delays for each of those plants.

#### Diablo Canyon, Units 1 and 2

The current delay in the licensing process for Diablo Canyon, Units 1 and 2 is associated with the ongoing contested hearings being conducted by the Licensing Board and the Appeal Boards. Appeal Boards are conducting appellate hearings on seismic and security issues. The seismic evidentiary hearing was completed on October 25, 1980 and briefs from the parties will be filed and responded to by December 22, 1980. The security evidentiary hearing is scheduled to be completed by November 15, 1980 with a similar briefing schedule expected pursuant to the Commission's rules. Thus, Appeal Board decisions on both matters could be completed and issued as early as March 1981.

The Licensing Board has required contentions to be filed by the parties on fuel loading and low power testing issues by December 3, 1980. The nature of those contentions will affect the length of hearings, the need for further appeals, and the determination by the Licensing Board concerning

whether there is an advantage in separating low power and full power issues for hearing and decision. However, if full power TMI-2 requirements must be resolved before an initial decision on fuel load can be issued, then issuance of an SER supplement on full power TMI-2 requirements by the staff will be a critical path item in the hearing process since the supplement is not estimated for completion until March 1981. If fuel load issues are susceptible to separation, the Licensing Board potentially could be able to issue a partial decision by mid-summer 1981. A complete decision on full power issues is not expected before fall 1981. (The impacts of the 3 and 4 months shown in Attachment 4 for Diablo Canyon, Units 1 and 2, respectively, are based on issuing separate low power and full power licenses for Unit 1 and only a full power license for Unit 2.)

#### San Onofre, Unit 2

The delay of San Onofre, Unit 2 can be attributed to limited staff resources to deal effectively with the seismic design matter. The staff's resources in the seismic area are also being applied to other significant casework including Diablo Canyon, Units 1 and 2 and Summer, Unit 1. The staff plans to make every effort to complete its review in the non-seismic areas which will help complete the review but will not materially assist in eliminating the delay. The SER is scheduled to be completed in February 1981 with the start of the hearing expected to be in July 1981.

Summer, Unit 1

The delay in Summer, Unit 1 is mainly a result of limited staff resources especially with regard to seismicity. The target schedules developed in April 1980 projected SER issuance in August 1980 with OL issuance in April 1981 following a contested hearing. However, that projected schedule did not account for the additional two months required by the suspension of the immediate effectiveness rule. In addition, since projecting that schedule, the potential impact of the Charlestown, South Carolina earthquake on the seismicity of the site and region has been identified as a significant issue by the ACRS and is the pacing item to SER issuance in December 1980. Staff resources on seismicity are also being applied to the Diablo Canyon, Units 1 and 2 and San Onofre, Unit 1 reviews as well as GETR and SEP plants.

LaSalle, Unit 1

No hearing is required for this plant. The delay results from special review aspects associated with LaSalle, Unit 1. Since LaSalle, Unit 1 is the first BWR to be reviewed for an OL since the TMI-2 accident and is the lead BWR Mark II plant, application of the TMI-2 requirements has required additional staff effort. Because of this same consideration, the current (11/15/80) projection for OL issuance is April 1981.

Salem, Unit 2

There are currently four outstanding issues which require resolution before a full power license can be issued for Salem, Unit 2; i.e., emergency planning, equipment qualification, masonry walls and compliance with General Design Criterion 51.

With regard to emergency planning, FEMA has not yet evaluated the State and local plans since they are still being evaluated by the States involved (New Jersey and Delaware). The current projection for submittal of the plans to FEMA is December 1980 followed by a review period of about three weeks. A review of the licensee's site plan has identified a number of issues which require resolution before it can be found acceptable. The licensee has been informed and plans to respond in December 1980.

As a result of an audit of the Salem, Unit 2 equipment qualification study, the staff has requested that the licensee reevaluate the test reports that were used as the basis for the licensee's study. The revised study is expected to be submitted in December 1980. The staff also plans to conduct another audit before receipt of the licensee's submittal.

On November 10, 1980, the licensee notified us that there are some masonry walls which were not erected per design. The NRC is obtaining additional information on this matter and will make an evaluation as the additional information becomes available.



The NRC staff has determined that the containment penetrations for the main feedwater piping may not be in compliance with General Design Criterion 51 (fracture prevention of the containment pressure boundary). Additional information has been requested from the licensee in order that the staff may complete its evaluation of this matter.