

received 7/31/79

Summary of Interview with Mr. Harley Silver

The interview took place in Mr. Silver's office Monday morning, June 23, 1979. Those present in addition to Mr. Silver were W. Parler, T. Cox, and D. Evans. The interview started at 9:00 a.m. and proceeded without interruption until 11:35 a.m. Mr. Silver has been with the NRC for approximately 5½ years. In addition to his duties as project manager of TMI-2, he has served as project manager for Sequoyah, ^{Catawba & Nine Mile Point} Kewaunee, and Montague. All of his NRC experience has been in the Division of Project Management. Prior to his NRC experience, he worked for Westinghouse for eleven years.

He assumed the duty of project manager for TMI-2 in 1975. He relieved Beverly Washburn when the FSAR review was about in the middle of the second round of questions stage. He received a memorandum from Washburn in connection with the transfer of responsibilities as project manager and had a number of discussions with him. Mr. Washburn apparently now works for the DOE in Germantown. During most of 1975, Mr. Silver reported to Karl Kniel in DPM and since that time has reported to Steve Varga with the exception of the last several weeks when he has reported to Les Rubenstein.

Generally, Mr. Silver views his responsibilities as a project manager to involve: managing the review of the project; insuring that ^{an integrated} the review gets accomplished in a timely and complete manner ~~by the individual reviewing branches~~. With regard to the interface between the project manager and the technical reviewers, Mr. Silver indicated that much is accomplished verbally. If there is agreement that there is an issue, there is no problem. If, on the

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other hand, a technical reviewer's position is that there is an issue, the issue will usually be considered. Much of the major resolution of such issues is at the branch chief level; also, in some instances, management at higher level may be involved.

Responsibility for TMI-2 has never been transferred from DPM to DOR. A draft transfer memorandum to DOR was prepared on 9/19/78. Mr. Silver has prepared additional comments to supplement the draft memorandum. Dwight Reilley of the President's Commission staff has requested a copy of the transfer memorandum. I asked Mr. Silver to provide Tom Cox a copy of this draft memorandum. Responsibility for TMI 1 has been transferred to DOR. With regard to issues which apply to both plants, sometimes DOR takes the lead in handling them. Generally, however, DPM has the responsibility for TMI-2. Some of Mr. Silver's principal contacts in the technical area during his tour as project manager for TMI-2 include: Jim Watt, DSS; Sanford Israel in the Reactor Systems Branch; Frank Ashe in the Electrical Branch; Peter Hearn, Auxiliary Power Branch; Farouk Eltawila, Containment Systems Branch. Although he finds the relationship between a project manager and the technical review staff satisfactory, Mr. Silver said that it would be helpful for a project manager to have more direct control of a project.

With regard to who has the responsibility to make the final decision in the event that a technical issue is raised during the review, Mr. Silver noted that each director may operate somewhat differently. Normally, technical positions are forwarded by an assistant director as a branch position to the assistant director in DPM. In his experience as a project manager,

there are few such issues that have required lengthy discussions up to the director's level because of an internal difference of opinion with the NRC. Usually issues which have been carried up to the director's level on appeal involve matters where there is a difference between the staff's position and the applicant.

Commenting on whether the present organization permits an effective review of overall systems and the interaction among systems, Mr. Silver noted that some changes might be necessary. He noted that individual branches could accomplish this only in a very limited way, and that it is not possible for the project manager to accomplish this. His experience prior to NRC suggests that this objective needs to be accomplished by a group responsible for systems interaction and integration. There is no such group within NRC.

Mr. Silver indicated that he familiarized himself generally with the construction permit proceeding for TMI-2. He said he read the SER, and the Construction Permit background, and that this made him generally aware of some of the issues. He did not recall whether a memorandum was written by staff members having responsibility at the construction permit review stage to alert and guide staff personnel who would be involved in subsequent review of the project.

Mr. Silver noted that the TMI-1 proceeding had been transferred to DOR by the time he had assumed his duties as project manager for TMI-2. There was not a great deal of discussion between him and the people in DOR responsible

for TMI-1 matters. He noted that there was not a great deal of interface between the two plants. There were few shared systems where common analyses were called for. There were discussions between him and the DOR staff; otherwise, he didn't see a great deal of need for discussions with the DOR staff.

He also pointed out that there was not a great deal of discussion with staff members responsible for the Oconee facility at either the construction permit or operating licensing stages other than on generic matters, such as steam generator tubes.

As project manager, Mr. Silver presented the staff's position on TMI-2 to the ACRS. It was his function to assure that the staff had addressed adequately the concerns expressed by the ACRS. He can not assure that all of the concerns that were expressed by the ACRS between 1974 and 1978 were satisfied.

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Mr. Silver did not read the ASLB decision authorizing the issuance of a construction permit for TMI-2 nor did he examine the hearing record. His position is that the Licensing Board authorized the issuance of the construction permit, and he was not aware that there were any great matters of substance in the authorizing decision which required exploration.

As project manager, Mr. Silver had little involvement with the Regulatory Requirements Review Committee. The primary staff involvement with that committee is by the branches which advocate a particular staff position. He can not recall major items which had an impact on TMI-2 coming before the

Regulatory Requirements Review Committee. He pointed out that the staff in fact imposed many requirements on TMI-2 that were not required. As examples, he mentioned hydrogen generation and the capability for recombiners, sump tests, and certain model tests. With regard to internal appeals by GPU and Met-Ed, Mr. Silver's recollection is that not many issues were appealed on TMI-2. One issue that he does recall being appealed is the first of the 27 issues in NUREG 038⁰¹³⁸ having to do with the use of safety grade equipment to mitigate the consequences of a steam line break. Mr. Silver had no involvement with TMI-1. On occasion he has spoken to Robert Bernero, who served as the project manager for TMI-1 in the past. The discussion was primarily about aircraft crashes and there were no extensive discussions about other matters.

During the early stages of the FSAR review the staff dealt with GPU Services. As the plant neared completion and the time for operation approached, the staff dealt ^{increasingly} almost exclusively with Met-Ed. During the period 1974-1976, almost all of the staff's involvement was with GPU Services' people. The staff has also had contact with B&W and with Burns and Roe. Mr. Silver noted that a shift such as from the GPU Services to Met-Ed is quite standard practice in the industry.

If an issue is raised regarding a question of interpretation of a staff requirement or a regulation, the matter is usually resolved by establishing a branch position. He noted that it may well be that in some instances established procedure is bypassed, and this may result in a ratchet. He does not recall GPU Services prevailing on many of these kinds of issues (such as on the steam line break issue referred to earlier).

In response to a question regarding the review of Met-Ed's technical qualifications, Mr. Silver noted that the technical review is done primarily by the project manager. To some extent, assistance is provided by the Quality Assurance Branch. He mentioned the name of Fred Allenspach with whom he worked with in that branch. Presumably, QAB looks at the organizational structure, numbers of people, and qualifications of people. Mr. Silver noted that this part of the review is very subjective. He is not aware of any criteria or guides to assist the staff in conducting its review on the technical qualifications.

Fred Allenspach

He noted that Met-Ed's emergency plan was reviewed, developed, and approved on the basis of the guidelines in existence at the time. Amendment No. 65 to the FSAR, proposed after the TMI-2 operating license was issued has not been approved for TMI-2. This Amendment was found not to conform to Regulatory Guide 1.101, Revision 1.

It is not entirely clear whether the Emergency Plan at this stage has been amended to conform to the regulatory guide. Mr. Silver noted that application of the regulatory guide is a matter of some confusion to him, and that it appears that it is being applied in a rather arbitrary manner. Presumably, there was some agreement in DOR that because of severe limitation of staff resources, the only emergency plans ^{to} be reviewed against that guide would be ~~submitted~~ a revised emergency plan submitted by a licensee for whatever reason. This was the goal, but DOR ^R did not have the resources to do this. Only two plants (one of which is TMI-2) were reviewed against this regulatory guide. Mr. Silver pointed out he never received the John Sears' memorandum on Amendment No. 65 until a couple of weeks ago. As far as he is aware, no one else in DPM knew about this memorandum. This sort of arbitrary application

of the application to this regulatory guide does not make much sense to Mr. Silver. It is true that somewhat the same practice may be followed in other areas in the past. For example, in the QA ^(prep testing) area, a regulatory change may be ignored by the staff until a licensee proposes a change, and then the staff will impose new guidelines.

Mr. Silver is still the project manager for TMI-2. He pointed out, as we know in fact, DOR is very much involved in all matters relating to TMI-2. He noted that Bill Gammill, Assistant Director, DOR, has recently asked him to update the 9/19/78 draft transfer memorandum to DOR. The transfer of responsibility for TMI-2 from DPM to DOR may be imminent.

Mr. Silver stated that he has never been involved in the Pebble Springs Reactor project and was not aware of the ACRS's Question 6 dated November 21, 1977 on that project.

With regard to general background information, Mr. Silver stated that periodically as project manager he is informed about research efforts, ongoing efforts in Standards, construction division reports on TMI-2, I&E reports on the plant, LERs on the plant, monthly operating reports on the plant, and monthly summaries of LERs. For events at the plant, such as the 4/23/78 ECCS activation at TMI-2, Mr. Silver was informed and was involved.

Mr. Silver said that he did not maintain a project manager's log. He noted that Mr. Washburn, his predecessor, was a meticulous record keeper. Mr. Silver apparently has Mr. Washburn's records and was asked to provide a copy to Tom Cox.

To the best of his knowledge, everything of technical substance regarding the TMI-2 license application is in the public docket and official licensing document for that proceeding. As far as he is aware, Mr. Silver has found the TMI-2 docket file to be complete. With regard to operating procedures, Mr. Silver noted that they were reviewed by the staff only to a very minor extent. The staff has neither the resources nor the detailed plant knowledge for a review in-depth review of operating procedures. I&E does review the procedures to make sure that they exist, but even this review is not believed to be one in great depth. The assumption is that technical specifications cover the requirements for plant operation, and that the utilities will transfer these requirements to operating procedures.

On the subject of technical specifications, the TMI-1 was the first instance in which B&W standard technical specifications were used. In effect, the specifications were reviewed initially under Section 16 of the FSAR and then as B&W's standard technical specification. Joe _____ was a principal staff contact regarding B&W's standard design specification. Coordination occurred with many people regarding this review. The technical specifications were focused on in detail during about the last year of review (1977). There is a document known as the "Proof of Review Complete," which is distributed, and it is presumably in the official licensing docket.

The review of the applicant's control and quality assurance program is somewhat more intensive than the staff's review of operating procedures and less intensive of its technical specifications. This review effort is headed by the QAB and Mac ^{R. McDermott} _____ was a principal staff reviewer.

Mr. Silver pointed out that the Standard Review Plan was in fact ^{essentially} followed in

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the staff's review of TMI-2 and the exemption to TMI-2 which was afforded by Rusche's Office Letter No. 9, as revised, simply meant that departures from that plan would not have to be documented. He is not aware of the existence of a list of major departures of TMI-2 from the SRP. Such a list could only be prepared by someone having a detailed familiarity with both the SRP and the TMI-2 plant.

Mr. Silver is not aware of any significant unresolved issues for TMI-2 at the time the operating license was issued, other than as documented in the official licensing files. He knows of no substantial dissenting staff views regarding the need for such things as tighter design requirements, and he stated that he so informed the ACRS during his TMI-2 presentation before that committee.

He was asked whether he was ever placed under, what in his judgment, was an unreasonable position to complete his work on time so that the quality of the review would be sacrificed. His answer was no. In addition, he was not aware of any of the staff members who reviewed TMI-2 who indicated that there were unreasonable demands placed on them. He does not know of any technical reviewer ever raising an issue to the effect that the quality of the technical review was being handicapped because of the press of time.

He indicated that the operator licensing function of Paul Collins' office was handled as an entire separate manner. The operator licensing function is completed before the operating license is issued.

With regard to precursor events, Mr. Silver stated that he was not informed prior to March 28, 1979 of the following events:

The August 1974 event in a foreign reactor; the Michelson letter of January 1978; the Novak-Israel memorandum of 1/10/78; the Sternberg memorandum of 3/31/78 concerning the PORC at TMI-2 sticking open.

He was aware of the David-Besse incident of 9/24/77. He is not sure whether he was aware of the Rancho Seco severe cooldown transient of 3/20/78. He became aware of the ACRS Question No. 6 11/21/77 in the Pebble Springs proceeding after 3/28/79. Other than as revealed in the public record, he was not aware of any concerns expressed by B&W engineers or others regarding the design features of TMI-2. He was not aware of any specific concerns regarding control room design inadequacies in TMI-2.

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The people with whom he dealt in the applicant's organization were viewed on the basis of his experience in other proceedings as ^{somewhat} above average, in the vendor organization as average, and in the architect-engineer organization as average.

He said there were a minimum number of shared systems between TMI-1 and 2. These were reviewed and evaluated. The review of TMI-2 did not concern itself with major differences between that plant and TMI-1. They were not compared as such during the review except for the shared systems; they were treated as separate units.

His impression of the quality of the staff's quality of the TMI application is average, that is, no better or no worse than the usual staff review. Also the ACRS raised a lot of items on TMI-2 that appeared to be routine items;

he does not recall that the ACRS raised major issues regarding the plant. The ACRS review functions to keep the staff on its toes. It doesn't appear, at least in the TMI-2 proceeding, that additional safety concerns were ventilated because of the ACRS's review. The ALSB review provides a means for public participation. Mr. Silver's recollection is that the Licensing Board's participation did not add to the effectiveness of the overall review from the standpoint of increased safety. On the subject of staff documentation of its position, there is some basis, in at least some instances, where the reasoning for the staff's position may appear to be less than clear and specific; on the other hand, documents such as an SER must be of finite length. In fact, the staff's review is probably much more thorough and rests on a sounder basis than the SER standing alone might indicate.

On the subject of post-licensing staff actions, if the action involved both TMI-2 and 1, sometimes DOR handles the issue as a matter of convenience. Mr. Silver's recollection is that all of Met-Ed's commitments regarding TMI-2 were incorporated into the operating license. No major exemptions from regulatory requirements were granted to TMI-2. The issue of the replacement of ^{main}~~minor~~ steam safety valves was presumably handled by I&E on the theory since these were not safety related, they were not reviewed by NRR in the first instance, and there was no safety reason for I&E to refer that issue to NRR. It may well be that the question of the interface between I&E and NRR on matters such as this should be examined.

He does not believe that the regulatory process is handicapped because vendors and architect-engineers are not directly subject to the licensing requirements of NRC. He believes that we can depend in a satisfactory manner on the relationship between a utility and the vendor to insure that our regulatory objectives are met. In response to a question about the vendor's inspection program conducted by Region IV, Mr. Silver commented that he received the results of these inspections, and he had no suggestions in that regard.

In response to a question regarding criteria which the staff uses for making decisions on ratcheting and backfitting, Mr. Silver observed that the criteria which are used are not clear to him; also, he has no reason to quarrel with staff practices in this area.

Regarding the two step licensing process, it may be that a one-step process would be better; also, he does not believe on the basis of his experience that this in of itself would affect greatly ratcheting.

He does not believe that the present system provides any particular incentive for innovations on the part of applicants and vendors. There have been innovations, but perhaps there is some tendency for the existing system to inhibit innovations to improve safety. He does not believe, however, that the Safety Review Plan has had the effect.

He is not aware of any staff review information on TMI-2 or on any B&W design which raises significant technical issues which is not in the public domain. He is not aware of any Israel/Novak correspondence regarding Davis-Besse other than the 1/10/78 memorandum which has been previously referred to. We asked Mr. Silver if he had any specific suggestions for us to get better insights

into the history of the licensing of TMI-2 other than examining the basic review process as we are trying to do. He had no such suggestions.

We asked whether there were any specific people other than those previously mentioned which we should be contacting regarding the history of TMI-2.

Mr. Silver again suggested Jim Taylor, B&W, and Beverly Washburn, the person who preceded him as project manager, and Scott Dom of Burns & Roe.

With regard to any additional comments or suggestions to assist us in looking to the history of TMI-2, Mr. Silver noted that the questions of operator awareness of things other than routine operation and recognition and capability of the operator to handle these things should be examined. He also said that examination of the adequacy of the single failure criteria might also be in order, but it is recognized that there have to be bounds placed on the failure criteria which are applied.