

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-546,79-08; 50-547/79-08

Docket No. 50-546; 50-547

License No. CPPR-170; CPPR-171

Licensee: Public Service of Indiana
1000 East Main Street
Plainfield, IN 46168

Facility Name: Marble Hill, Units 1 and 2

Investigation At: Marble Hill Site and vicinity

Investigation Conducted: June 22, 25-29, July 7, 11-13, 17-20, 1979

Investigator: *J. E. Foster*
J. E. Foster 8/9/79

Inspectors: *F. C. Hawkins*
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Investigation Summary

Investigation on June 22, 25-29, July 7, 11-13, 17-20, 1979 (Report No. 50-546/79-08; 50-547/79-08)

Areas Investigated: Special, unannounced investigation into allegations of improper repair of concrete structures and concealment of nonconforming concrete areas; review of pertinent records, interviews, inspections of

construction activities. The investigation involved 220 inspector-hours onsite by three NRC inspectors and investigators.

Results: Numerous improperly repaired concrete areas were identified. Interviews with site workmen and former employees indicate that contractor personnel, at least to the level of Superintendent, were knowledgeable and may have ordered improper repairs to conceal nonconforming concrete areas. No items of noncompliance are identified within this report. These items will be covered in separate inspection reports.

REASON FOR INVESTIGATION

On June 12, 1979, Mr. Thomas M. Dattilo, the attorney representing Save The Valley, an intervenor group, wrote to Mr. Harold Denton, Director of the Office of Nuclear Reactor Regulation, requesting a halt in concrete placement, testing of concrete in place, and a review of quality control records pertaining to concrete at the Marble Hill site. Attached to the letter was a twenty-three page sworn statement from Mr. Charles Edward Cutshall, a former concrete finisher's helper at the site. The statement alleged improper repairs of honeycombed areas in safety-related concrete. Also on June 12, 1979, during an interview of PSI personnel by a Louisville TV station, one page of the aforementioned twenty-three page statement was given to PSI officials, and they were asked to comment on the statement. This was the first time the statement had been made public.

Public Service of Indiana (PSI) notified NRC Region III (RIII) at approximately 3 p.m. on June 12, 1979, that they had been provided with the one page of the Cutshall statement. On June 13, 1979, PSI transmitted a copy of the complete statement which they had obtained. On the basis of the information contained in the statement, an NRC investigation was initiated into the matter.

SUMMARY OF FACTS

Two NRC inspections of concrete activity at the Marble Hill site, conducted prior to receipt of the allegations, indicated problems with placement and repair of concrete at the construction site. Among problems identified was the improper repair of honeycomb areas (see IE Inspection Reports No. 50-546/79-03, and 50-546/79-04). A management meeting with PSI was held on May 15, 1979, to discuss these findings.

Following receipt of the statement of Mr. Charles Edward Cutshall, RIII personnel attempted to contact him to discuss the statement and gather additional details regarding the improperly repaired areas and concerning people who would be knowledgeable of the method of repair of these areas. Initially, RIII personnel were unable to contact Mr. Cutshall directly.

On June 21, 1979, PSI indicated that they had made an investigation on their own to determine whether any concrete patches in the plant had been improperly made, using a sounding method. They advised that their review indicated numerous deficient patches, including some patches made over honeycombed areas. Honeycomb is described as a void (rock pocket) in concrete left due to the failure of the mortar to effectively fill the spaces among coarse aggregate. Proper repair of such honeycombed areas involves the removal of all honeycomb or other unsound material, and performing a concrete patch by a correct procedure, utilizing appropriate material. Surface honeycomb patches can be an indication of internal honeycombing.

On June 22, 1979, RIII personnel visited the Marble Hill site, inspected concrete structures, held discussions with licensee and contract personnel, and requested that no more repairs or chipping be made of concrete patches until the NRC could review the situation at the site. PSI officials agreed to this request.

After several attempts, on June 25, 1979, telephone contact was made with Mr. Charles Cutshall by way of a telephone call from the office of Mr. Thomas Dattilo. Mr. Cutshall repeated the majority of the statements made in his twenty-three page affidavit and attempted to describe some of the locations where he believed that improperly repaired concrete existed in the Marble Hill plant. Due to the complexity of the plant, no exact locations could be obtained by telephone. Mr. Cutshall indicated that a number of improper repairs of concrete honeycombed areas had been made at the direction of the finisher superintendent.

RIII personnel then attempted to review the areas described by Mr. Cutshall, and identified several patches which had already been inspected by the licensee at each area. However, it was not possible to determine that these were the patches described by Mr. Cutshall. It was concluded that an adequate review of the areas described could not be made without Mr. Cutshall's physical presence onsite to point out the areas of his concern.

On June 26, 1979, the RIII Director and staff met with PSI officials at the Marble Hill site, and discussed the findings of the investigation at that point. Due to concerns expressed by the RIII staff and the fact that deficient repairs in concrete areas had been identified, NRC representatives requested that PSI stop safety-related concrete work, perform non-destructive examination of various concrete structures, identify and evaluate repaired areas for their adequacy, and review their entire program for concrete activities onsite. PSI officials committed to perform these actions.

On July 1, 1979, direct contact was made with Mr. Charles Edward Cutshall. On July 7, 1979 Mr. Cutshall was brought to the Marble Hill site to tour the plant, accompanied by RIII personnel. During this tour he pointed out 19 separate areas where he believed that improper concrete repairs had been made, and the locations of these areas were noted by RIII personnel. He again repeated his understanding that the finisher superintendent had ordered some cosmetic repairs to improperly consolidated areas so that PSI and the NRC inspectors would not be aware of them.

On July 9, 1979, Mr. Thomas Dattilo advised RIII personnel that he had obtained three more statements from former workmen at the site; Mr. Jewel Rogers, a former finisher's helper; Mr. Stanley Mortensen, a former concrete finisher; and Mr. Michael Walston, a former concrete finisher. These statements are attached as Exhibits II, III and IV. Mr. Mortensen was interviewed at his residence and then toured the Marble Hill site, accompanied by RIII personnel. RIII personnel were unable at that time

to substantiate his concerns relative to repair of an expansion joint. However, he advised that he had been ordered to cosmetically patch a honeycombed area in the lower auxiliary building and took RIII personnel to that location. Upon testing the indicated patch, it was found that the patch did cover a small honeycombed area of concrete. Mr. Mortensen repeated the statements contained in his affidavit, indicating that he had been directly ordered to repair this patch by the concrete finisher superintendent.

Interviews were held with individuals "F" and "G" both concrete finisher foremen. Individual "F" stated that he had been ordered, on occasions, to improperly repair some areas but that the individual that had ordered the repairs was no longer on site. He would not identify the individual. Individual "G" said he had not been ordered to repair any deficient concrete area.

Mr. Stephen Gayso, the Finisher Superintendent, was interviewed. He stated that he was not knowledgeable of improper concrete repairs, and had not ordered any finisher foreman or finisher to cosmetically patch unrepaired honeycombed concrete areas. On July 10, 1979, Mr. Gayso and individual "F" provided short written statements to the Newberg Company which indicated that they had not authorized particular individuals (those who had made written statements) to patch or cover up any defective surfaces, honeycomb voids or rock pockets without prior approval from Newberg quality control or PSI representatives.

RIII personnel interviewed a number of Newberg employees, including concrete finishers and finisher's helpers. During these interviews three signed statements were obtained. One of these indicates that the foreman for the finishers crew did not order any of his crew to repair any defective areas and was not knowledgeable of any defective repairs. One of the statements corroborates earlier statements that the Finisher's Superintendent gave the orders to perform these deficient repairs, and that the foremen passed on these orders to the working crews. These statements are included as Exhibits VIII, IX and X.

During the interviews, one finisher expressed a strong opinion that the individuals who had made statements had done so due to personal grudges against the Finisher Superintendent. A portion of this interview was audio tape recorded, and a transcript of the taped portion is attached as Exhibit VII. Statements from various workers indicated that the finisher superintendent was often present on the job site during the period of time when deficient repairs were being made. Also, interviews indicated that workmen only perform work assigned (ordered) to them. This is standard construction site procedure.

Testing of areas described by Mr. Charles Cutshall, Mr. Mortensen and individual "N" indicated that virtually all of these patches were improper. All unsound material had not been removed prior to patching many of the patches, and several were found to have weak drypack material.

The investigation confirmed that many areas of honeycombed concrete were improperly repaired in that (1) the drypack material was not sound, (2) all honeycomb or unsound materials had not been removed prior to patching, or (3) no effort had been made to remove honeycomb prior to patching. The number of instances of deficient patches is sufficient to conclude that finisher foremen were knowledgeable that such patches were being produced, and ordered this work to be done. If the finisher superintendent were present at the worksite, it is logical to assume that he would also be aware that such work was being performed. As workmen and foremen had no experience in quality control, it is possible that many workmen were not aware that such patching (allowable on routine commercial work) was not acceptable at the Marble Hill site.

No evidence was developed to indicate that PSI management was aware of the deficient repairs. Details as to deficiencies with the PSI Quality Control program will be covered in a separate inspection report.

DETAILS

1. Personnel Contacted

Public Service Indiana

M. Bright, QC Inspector
R. M. Brown, Construction Project Superintendent
J. J. Cook, Senior Staff Construction Engineer-Nuclear
L. A. Crews, Vice President Construction
J. Caughlin, Vice President, Nuclear Services Department
S. K. Farlow, Site Design
F. R. Hodges, QA Manager
W. Minick, QC Inspector
T. L. McLarty, QC Engineer
J. Rutkowski, Manager, Licensing
S. W. Shields, Vice President, Electric System
D. L. Shuter, Lead QC Inspector
W. P. Smith, Construction Field Office Supervisor
W. D. Ward, Construction Manager

Newberg-Marble Hill

J. Ball, Lead QC Engineer
M. P. Cooper, General Superintendent, Construction
F. W. Durocher, Vice President
S. Gayso, Superintendent, Finishers
E. P. Guy, Quality Assurance Supervisor
W. Hamilton, Project Manager
J. Spann, QC Inspector
W. Townsend, Superintendent

Sargent and Lundy

K. Kostal, Senior Structural Project Engineer
A. M. Weiss, Concrete Technologist

U. S. Testing

D. Lanham, Supervisor

Save The Valley

T. Dattilo, Attorney
R. Gray, Chairman of the Board

Individuals

C. E. Cutshall, Former Finisher's Helper
S. Mortensen, Former Finisher
J. Rogers, Former Finisher's Helper
M. L. Walston, Former Finisher
Individuals "A through "O"

2. Introduction

The Marble Hill Nuclear Power Plant, Units 1 and 2, licensed to Public Service of Indiana is under construction at a site approximately 10 miles south of Madison, Indiana. Sargent and Lundy is the Architect Engineering Company for the Plant. The facility is designed to utilize a pressurized water reactor supplied by Westinghouse, and to generate 1150 megawatts of electricity per unit. Unit 1 is approximately 20% complete and Unit 2 is approximately 6% complete at this time.

Newberg-Marble Hill (Newberg), a joint venture of Gust K. Newberg Construction Company, and Gust K. Newberg, Incorporated, is the prime concrete contractor for the facility, providing both safety-related (containment, auxiliary, and fuel handling buildings) and non safety-related (turbine, administrative buildings and cooling towers) concrete structures.

3. Scope

This investigation focused on allegations received from Charles Edward Cutshall regarding improper repair of concrete surfaces at the Marble Hill plant and on whether Newberg-Marble Hill management personnel were knowledgeable concerning or had ordered these improper repairs. This report will not deal with technical questions regarding concrete patches or related regulatory matters. Other inspection reports will cover those quality control and engineering problems observed at the site, and related noncompliance items.

4. Technical Background

Honeycomb areas in concrete are voids (rock pockets) left in concrete due to failure of the mortar to effectively fill the spaces among coarse aggregate. Honeycombed areas can be caused by several factors such as improper placement of concrete (resulting in separation of the coarser aggregates), lack of sufficient vibration during placement, improper concrete mix design, inadequate concrete form design or preparation, and configuration of reinforcing steel within the concrete forms. Some honeycombing is to be expected as a normal occurrence, especially in nuclear power plant construction where walls and slabs are heavily reinforced.

Honeycombed areas on the surface of a wall or slab are identifiable when the concrete placement forms are removed, and appear as rocky areas or open pockets. Generally, the extent of such honeycombing cannot be determined visually until all of the unsound material has been removed by chipping. Surface honeycombing can be an indication that further internal voids exist.

At the Marble Hill site, honeycomb was classified as being a "minor" honeycomb (less than one half of a reinforcement bar exposed after unsound material was removed) or a "major" honeycomb (half or more of a reinforcement bar exposed when the unsound material was removed).

Upon removal of concrete forms, the area was to be inspected, and any honeycombed areas (or suspected areas) were to be identified and tagged with a blue "temporary hold" tag. The unsound material was to be removed by chipping, and if classed as a minor honeycomb, patched without further quality control inspection. If the area was classed as a major honeycomb, a nonconformance report (NCR) was to be generated, followed by PSI quality control inspection of the final condition of the area before patching. The resulting nonconformance report would be processed in the normal manner. Such nonconformance reports are routinely reviewed during NKC inspections, to determine if proper engineering evaluations and corrective actions are being made of nonconforming items.

When properly identified, unsound materials removed, and patches properly placed, surface honeycombs do not reduce the structural strength of a concrete structure. Similarly, internal voids, when identified and located, can be repaired or evaluated through engineering analysis to determine if the structure in which they are located has been significantly weakened.

5. Receipt of Allegations

On June 12, 1979, at approximately 3:15 p.m., RIII was notified by PSI officials that during an "on camera" interview by a Louisville TV station, a PSI official was given one page of a twenty-three page sworn statement and asked if the allegation contained in the statement was true. The page shown to the PSI individual indicated that improper and cosmetic repairs had been made to honeycomb areas in the plant. PSI advised they did not have the entire statement, but were trying to obtain a copy.

On July 13, 1979, at approximately 3:00 p.m., PSI transmitted to RIII a barely readable telecopy of the sworn statement made by Charles Edward Cutshall. RIII personnel requested a clear copy.

On July 14, 1979, a clear copy of the statement was received at Region III. A copy of the sworn statement of Charles Edward Cutshall dated May 8, 1979 is attached as Exhibit I. During later conversation

with Mr. Thomas M. Dattilo, Attorney for "Save the Valley," he indicated that Mr. Cutshall had required a thirty-day period between production of the statement and release of the statement to the public, and that he had complied with this requirement.

6. Attempts to Contact Charles Edward Cutshall

On June 14, , RIII personnel attempted to contact Charles Cutshall through contact with relatives, and were unable to obtain a current telephone number. On June 15, 1979, Mr. Thomas Dattilo called RIII and advised that he was acting as attorney for Mr. Cutshall. He suggested that RIII bring Mr. Cutshall back to the Marble Hill site from his present residence in Texas.

During the period of June 18 through 20, several telephone calls were made to Mr. Dattilo and to PSI, in an attempt to make arrangements for Mr. Charles Cutshall to visit the site accompanied by RIII personnel. This attempt to arrange a site visit was complicated by Mr. Dattilo's position that Mr. Cutshall should be accompanied by himself and by an engineer selected by Save the Valley. No direct contact with Mr. Cutshall was allowed by Mr. Dattilo during this period.

7. PSI Actions

On June 21, 1979, RIII personnel contacted PSI QC personnel at the Marble Hill site, and inquired as to their actions following receipt of Mr. Cutshall's allegations. PSI personnel advised that they had begun their review of the allegations by testing patches via a soundin method (beating on the patches with a hammer and listening for the sound of reverberation). They advised that their review indicated that there were numerous improperly prepared patches throughout the auxiliary building, and that in some cases it appeared cosmetic repairs had been made to honeycombed areas which had not been removed.

8. Initial Site Visit

On June 22, 1979, RIII representatives visited the Marble Hill site, held discussions with licensee and contractor personnel, and inspected areas which had been reviewed by the licensee and his contractors. During this review it was noted that at least five areas had been found where cosmetic repairs had been made over obviously honeycombed areas in the concrete surfaces (unsound material had not been removed). The licensee advised that Newberg had been given a Stop Work Order prohibiting them from placing any further concrete patches until the investigation process had been completed. Licensee personnel stated that, on the basis of these findings they had held discussions with the contractor and identified what they considered to be deficiencies in the contractor's procedure and in the PSI overview of the

concrete placement and repair program. They advised that they had initiated changes to correct these procedures and felt confident that work could proceed in safety-related areas. A press conference was held on June 22, 1979, and the press was advised of the NRC findings at that time.

9. Telephone Contact With Charles Cutshall

On June 25, 1979, RIII personnel visited the Office of Mr. Thomas Dattilo, and participated in a conference telephone call with Mr. Charles Cutshall. This was the first direct contact with Mr. Cutshall. Mr. Cutshall stated that he was aware of a number of areas in the Marble Hill plant where improper repairs had been made to concrete surfaces. He tried to describe the exact location of a number of these patches to RIII personnel, with little success. Due to the complexity of the plant and the relatively small size of the patches it was uncertain exactly which area, or which wall of the plant Mr. Cutshall was describing.

Mr. Cutshall repeated the statements made in his sworn statement, and indicated that the concrete finisher's foremen were aware of the deficient patches and that the concrete finisher superintendent had ordered these patches to be made. He stated he had not personally heard the concrete superintendent give the order for deficient patches to be made, but stated that it was common knowledge among finishers that the foremen had received such instructions.

10. Contact With Former Finisher Foreman

On June 26, 1979, Mr. Jack Ratkowski of PSI advised that he had participated the previous day in a call-in style radio show, and during this program an individual had called in and discussed concerns relative to the Marble Hill site. He indicated that this individual had left his name and requested someone from the NRC contact him. On the evening of June 26, 1979, the RIII investigator contacted this individual, Individual "A". Individual "A" stated that he was not the individual who had contacted the radio talk show. However, he indicated that he had been foreman of a finisher crew at the Marble Hill site, and some of the allegations made by Charles Cutshall were true, although Charles Cutshall had not worked on the containment building. Individual "A" stated that the Finisher Superintendent for Newberg had told finishers not to talk to the NRC and to busy themselves doing some other task if a PSI individual happened to come by while they were performing an improper patch.

11. Site Interviews

On June 28 and 29, interviews were held with Newberg personnel, Individuals "B", "C", "D" and "E". None of the individuals interviewed made any statement that Newberg management was aware of the practice

of deficient patching or that any Newberg management official had given an order for these patches to be made. They indicated various problems concerning the speed that work was being performed, storage of cement material which caused low strength drypacking (used for patching) and noted the fact that Mr. Charles Cutshall had not liked the Finisher Superintendent.

12. Site Tour With Charles Cutshall

On July 1, 1979, direct telephone contact was made with Mr. Charles Cutshall, and during subsequent contacts, he agreed to come to the Marble Hill site. Arrangements were made to transport him to the site.

On July 7, 1979 Mr. Cutshall, accompanied by three NRC personnel, toured the Marble Hill site and pointed out specific areas of his concern. Mr. Cutshall directed NRC personnel to nineteen separate areas where he believed that improper concrete patches had been placed, and the exact locations of these patches were noted during the site tour. Mr. Cutshall also pointed out several areas where he felt that construction was deficient due to water seepage, and NRC inspection personnel advised that the amount of water seepage observed was normal, considering the height of the water table and the status of construction at that point.

Mr. Cutshall indicated that several patches which he had pointed out had been made under the direct orders of the Newberg concrete Finisher Superintendent.

13. Additional Statements

On July 7 and July 8, 1979, Mr. Thomas Dattilo obtained statements by three other individuals - Mr. Jewel Rogers, a former finisher's helper; Mr. Michael L. Waltson, a former concrete finisher; and Mr. Stanley J. Mortensen, a former concrete finisher. These sworn statements were subsequently provided to RIII personnel on July 11, 1979. Copies of these statements are attached as Exhibits II, III, and IV.

14. Site Review and Investigation

On July 11 through July 13, Region III personnel visited the Marble Hill site, interviewed licensee and contractor personnel, and reviewed site documents. Contractor personnel advised that the first structural concrete pour for the plant had been performed in February 1978, and that initially patching was done by the finishers without any criteria for production or inspection of the patch, and no checks had ever been made of completed patches. It was additionally stated that such patches were not a structural concern but pertained only to fire protection. Newberg personnel noted that no procedure had been

written on how to perform a patch and no procedure had additionally been written for the drypack activity itself. They advised that on May 7, 1978, procedure (QAPN-10) had been rewritten concerning identification and approval of honeycombed areas for patching which provided for notification of PSI officials when a major honeycomb, that which exposed more than half of one reinforcement bar, was detected. Newberg personnel advised that the finisher foreman would determine when the chipping was satisfactory on a minor honeycomb, and the amount of chipping was not spelled out in the procedure, but left to the foreman's discretion.

Contractor personnel advised that there had been occasions, during inclement weather, especially rain, when finisher crews and form stripping crews had been sent into the auxiliary building and told to simply remove forms from concrete and place patches. Newberg personnel stated this was done so that they would not have to send these individuals home without work on those days when other work was not available. They advised that they suspected that some of the deficient patches had been made during some of those time periods when workers were given general instructions to go down into the plant and patch honeycombed areas. They stated that they felt, because of their relative inexperience with such nuclear power plant work, workmen patched over honeycombed areas without benefit of quality control inspection.

On July 12, 1979, Mr. William Townsend, Superintendent for Newberg, was interviewed by RIII personnel. He stated that no one in Newberg had ever instructed any of their workers to do anything improper, although honeycombed cement was a constant and aggravating problem at the work site. He advised that sending crews down into the auxiliary building so as to keep them working on rainy days was a standard procedure in construction and that during these occasions workers might do work and not know that it was wrong. He stated that he supervised the work of Mr. Stephan Gayso and he had not dealt with any of the finishers himself. Mr. Townsend advised that he felt the problem at the plant had resulted from lack of knowledge on the part of the finishers involved with the construction work, and that these individuals had not realized that cosmetically covering a honeycomb patch would not be an acceptable procedure at this type of plant.

On July 12, 1979, Mr. John Ball, Lead QC Engineer for Newberg, was interviewed by RIII personnel. He stated that he had not been knowledgeable of any deficient concrete areas being repaired and had been totally surprised when the allegations had been made public. He stated that the Finisher Superintendent and the other finishers had been very good at reporting honeycomb when observed in the field, and the QC Department had been advised of such areas daily. He stated he was aware that personnel were sent in to the auxiliary building on rainy days, and advised that he had often been called to

inspect honeycombed areas found during those periods. Mr. Ball advised that he had not ordered any cosmetic coverup of honeycombed areas, and felt that the PSI quality control inspector had been very strict in his review of honeycombed concrete areas. He provided his opinion that Newberg did not have a sufficient number of quality control inspectors to adequately control the job (be present when the forms were removed from concrete surfaces) so as to identify honeycombed areas before the finishing crews were advised to patch those areas. Mr. Ball stated that he was aware that many of the newly identified improperly repaired areas were not identified on nonconformance reports and again stated his feeling that this was because the workmen had not realized that they were cosmetically covering a nonconforming condition.

On July 12, 1979, Individual "H", QC inspector for Newberg was interviewed. He made the same statements as Mr. Ball had made relative to the lack of adequate QC coverage and stated his opinion that the workmen who had made the deficient patches had not been aware that this was not an acceptable practice. Individual "H" denied any knowledge of such deficient patches.

Individual "I" QC inspector for PSI, was interviewed on July 13, 1979. Individual "I" was the individual who had primary responsibility for inspection and review of concrete patches in the auxiliary building, where the majority of deficient patches has been uncovered. Individual "I" indicated that he had not been knowledgeable of honeycomb concrete areas being cosmetically repaired and described the procedure whereby PSI quality control would be involved in honeycomb repair. The procedure for a honeycomb repair provides that a minor honeycomb, one which does not expose more than half of the reinforcement bar, is simply chipped back to a sound surface and patched by the contractor, without notification to PSI quality control personnel. In the case where a honeycombed area is chipped back, and reveals more than half of a reinforcement bar, the procedure calls for notification of PSI quality control to review the situation, and generation of a nonconformance report documenting the situation. Individual "I" stated that under these conditions, he would not have been advised when the craftsmen had covered over a honeycombed area without review by Newberg quality control or generation of a nonconformance report. He noted that Newberg had recently fired some people in the placement crews who had been responsible for improper vibration of concrete during placement. He stated he felt that the contractor was trying to produce better work and had recognized a problem with honeycomb areas in the past. Individual "I" stated that he had not recognized the problem of storage of cement materials in barrels, which allowed them to absorb water and become less reactive, resulting in weak dry patches.

15. Review of Signed Statements

On July 10, 1979, Mr. Stephen Gayso and Individual "F" both made signed statements to Newberg Marble Hill management. During their

interviews, noted below, these statements were reviewed with them. From a review of the statements, whose wording is somewhat unclear, it appears that the statements indicate that in some cases repairs were made of deficient areas and these repairs were made with the knowledge of either PSI management, Newberg QC, or Newberg supervision. Mr. Gayso indicated that the wording in his statement was not meant to indicate this, but Individual "F" indicated that this was a correct interpretation of the statement that he had made. Copies of the two statements are attached as Exhibits V and VI.

16. Interview With Finisher Foreman

On July 12, 1979, Individual "F", Foreman for one of the two present finisher crews, was interviewed. Individual "F" stated that if a honeycombed area was not tagged with a quality control tag, the workmen would assume that the area had been cleared for them to patch. He advised that four or five men from his crew had done the majority of patches, and that there was a problem getting qualified workers on the site. Individual "F" stated that he felt that Mr. Stephen Gayso and he were being "set up", by individuals who dislike them, and that some of the areas that had been discovered might have been purposely repaired improperly.

Individual "F" stated that he had heard that an individual had been ordered to come behind the concrete form strippers and patch honeycomb areas before inspectors could observe the concrete surfaces. Individual "F" would not name the individual who had given these orders, but indicated this individual was no longer on site and that the orders had come from "high up in Newberg". Individual "F" indicated that most of his information was hearsay, and declined further elaboration.

17. Interview With Mr. Stephen Gayso

Mr. Stephen Gayso, Superintendent for the Finishers, was interviewed on July 12, 1979. He stated that he had not ordered any personnel to have the crews patch areas where honeycomb had not been removed back to solid surfaces. He indicated that on occasion, such as during inclement weather, he had ordered the foremen to take their crews and patch areas. He stated that these instructions had not meant for craftsmen to patch honeycombed areas which had not been properly repaired. Mr. Gayso stated that neither Newberg quality control nor PSI personnel would approve of patching of areas where honeycomb was not removed, if they were knowledgeable of such an area.

18. Interviews With Finishers

Several further interviews were held with finishers. These finishers did not indicate that they had been ordered to perform deficient patches. During these interviews, finishers and finisher's helpers stated that they did not do any work onsite unless they were specifi-

cally ordered to do so, and this is common practice at all construction sites. They further stated that the foreman passes on the orders which he receives from the superintendent to craftsmen.

On July 18, 1979, a finisher, Individual "J", requested that his interview be tape recorded, as he felt that some of the statements being received by the press and the NRC were incorrect, and that there was a directed program to discredit Mr. Gayso and the various foremen on the job. A typed transcript of the recorded interview is included as Exhibit VII. In general, Individual "B" stated that each of the individuals who had made statements had some personal reason to dislike either Mr. Stephen Gayso or the Newberg company. He indicated that Mr. Gayso had been hard on workers who had not done their share of the work, and had fired a number of workers. He stated that he felt that some of these workers were trying to have Mr. Gayso dismissed through their statements by way of revenge for their treatment.

19. Interview With Mr. Stanley Mortensen

Mr. Stanley Mortensen, a former finisher at the Marble Hill plant, was interviewed on July 18, 1979, at his residence. Mr. Mortensen indicated that Charles Cutshall and he had worked together closely at the plant, as a team, and that Charles Cutshall had asked if he would make a statement. Mr. Mortensen described several areas where he believed there were improper patches and discussed with RIII personnel his concern relative to a concrete expansion joint on the exterior of containment building No. 1. In addition, several problems pertaining to union matters were discussed. On the evening of July 19, 1979, RIII personnel accompanied Mr. Mortensen to the Marble Hill construction site. Mr. Mortensen and the RIII personnel toured the Unit 1 containment building and located the expansion joint (which was mentioned in his statement) on the outside wall. The drawings for the expansion joint had been procured by RIII personnel earlier in the day and had indicated no problems in this particular area. Mr. Mortensen was not able to describe the exact condition that he felt had occurred there. It was noted that the joint was a non safety-related item itself.

Mr. Mortensen directed RIII personnel to an area in the auxiliary building wall, against the turbine building, and took them directly to a small patch near the floor level which he indicated had been improperly made, as the honeycomb material had not been fully removed. He stated that he had been personally ordered by Mr. Stephen Gayso to patch this area before all the unsound material had been removed. RIII personnel struck this particular patch, and sections of the patch fell out revealing a honeycomb surface.

20. Interview of Concrete Finisher

On July 19, 1979, Individual "K", a concrete finisher, was interviewed by RIII personnel. He stated that he himself had done very little patching at the plant, as he had advised Mr. Gayso that he was not qualified to do this work. He stated he had been told that Individual "L" had been asked just the previous day to cover up a patch of honeycomb concrete on the turbine building. He stated that Individual "M", a foreman on one of the production crews had allegedly asked Individual "L" to perform this work. He also noted that just the previous day while working on turbine building No. 2, he had been provided with "dead" cement. This "dead" cement had been improperly stored in a fifty-five gallon drum on turbine building No. 2. Individual "K" stated that it was a possibility that a number of the production or stripping crews could possibly have patched some of the deficient areas discovered, as it would have been relatively easy for them to have procured the cement mixture and troweled it on so the honeycombed areas would not be visible. Individual "K" provided RIII personnel with a signed statement concerning the interview which is included as Exhibit VIII.

21. Interview With Finisher Foreman

On July 17, 1979 Individual "G" was interviewed. He stated that he was a foreman for one of the two remaining crews of finishers and that none of his crew members had patched areas not previously tagged and identified. He stated that he had been "chewed out" for talking with an NRC inspector in March 1979. Individual "G" provided RIII personnel with a signed statement concerning the interview which is attached as Exhibit IX.

22. Interview of Finisher Union Steward

On July 18, 1979 Individual "N", the Union Steward for the finishers at Marble Hill site was interviewed by RIII personnel. Individual "N" stated that members of the finisher's crews had been ordered by the Newberg concrete finisher superintendent to patch areas where honeycomb had not been fully removed from concrete surfaces. Individual "N" provided RIII personnel with a signed statement concerning this interview which attached as Exhibit X.

Individual "N" was asked to point out some of the improperly repaired areas to RIII personnel. Two areas, one on the auxiliary building and one on the turbine building were pointed out. The location on the auxiliary building was tested by striking with a piece of reinforcement bar, and the surface broke off revealing a section of honeycombed concrete beneath. The location on the turbine building was later tested by contractor personnel, witnessed by PSI and NRC personnel. A honeycombed area was exposed when the cosmetic patching material was removed.

23. Examination of Indicated Areas

The areas indicated by Charles Cutshall and Individual "N" were all noted as to location, and PSI personnel were advised that RIII representatives wished to observe destructive examination of these locations, which totaled 21 separate locations. Of these 21 locations all of the areas with the exception of one proved to be either made of deficient material (the dry packing was not solid), made on areas where all the honeycomb or other materials had not been sufficiently chipped back to a sound surface, or areas where there was no evidence that the honeycomb had been chipped back at all. The condition in these areas appears to substantiate the comments made by the individuals who directed NRC personnel to these locations.

24. Telephone Contact With Finisher Union Business Agent

On July 24, 1979, Individual "O", the Business Agent for the finisher's union was contacted by the RIII investigator. This contact was made because an individual identifying himself as the Business Agent had contacted the RIII office on the previous evening, indicating that he wished to be contacted.

Individual "O" stated that he had not contacted the RIII office and he did not know who had left his name and telephone number. He stated that he had worked as a foreman at the Marble Hill site and was aware that the Finisher Superintendent had ordered some repairs be made where honeycomb had not properly repaired. He stated that he had never been personally ordered to repair such area cosmetically. He said the majority of the workmen at the site had never worked at a nuclear power plant before and might well have made cosmetic patches on honeycombed areas without realizing that this was contrary to the quality control procedures for nuclear power plants.

25. Discussions With PSI Officials

Discussion with PSI officials concerning their investigation of the allegations indicated that they had held initial interviews with the two foremen of the concrete finisher crews onsite, and had made tape recordings of these interviews. PSI officials stated that they had not taken further investigative action, but had deferred to the NRC to perform this function.

NRC Region III personnel requested to review the tape interviews of the two concrete finisher foremen and were allowed to listen to these tapes on site. The interviews indicated site work was acceptable.

26. Contact with Mr. Jewel Rogers

Mr. Jewel Rogers was contacted by RIII personnel on August 4, 1979. He stated that he believed that he had been laid off from work at

Marble Hill due to his asking about the occurrence and repair of honeycombed areas. Mr. Rogers indicated that he had been present when the Finisher Superintendent had ordered cosmetic repairs to honeycombed areas.

Mr. Rogers stated that drypack materials had been mixed in numerous ways in attempts to find a suitable mixture, and that "dead" cement (unreactive due to hydration) had often been utilized for patching.

He indicated that he knew that one wall and one column in the auxiliary building were poured with grout (no aggregate), but did not know if this was improper. RIII personnel were aware that a nonconformance report was issued for a wall poured with grout. Site procedures allow the use of grout when reinforcement bar congestion or other features make honeycombing likely, and the change has been approved. If the grout meets the strength requirements of the wall or column, there is no reduction in the strength of the structure.

27. Contact with Mr. Michael Walston

Mr. Michael Walston was contacted on August 4, 1979. Mr. Walston indicated that he had been a member of Individual "F's" crew, and performed the majority of his work on the cooling tower areas, with some work in the auxiliary and turbine buildings.

He stated that his foreman ordered he and others to patch over small honeycombs in a small room in the auxiliary building, and the Finisher Superintendent observed this work and made no comment.

He indicated that he had seen concrete dropped more than thirty feet, utilizing a concrete tube, or "sock." Mr. Walston indicated that the end of the tube would be a foot or two above the surface of the pour. This is an acceptable practice.

28. Contact with Individual "G"

Individual "G" was re-contacted on August 6, 1979. Discussion with Mr. Mortensen (see Paragraph 19) indicated that Individual "G" was present during work on the expansion joint in question.

Individual "G" stated that Newberg and PSI quality control personnel had observed work on the expansion joint, and he felt the work was proper. He stated that Newberg personnel had originally wanted to pour an adjacent floor immediately after drypatching and sealing the joint, but had delayed the pour after discussion of the matter. Individual "G" indicated that pouring of the adjacent floor prior to the set-up of the drypatching of the expansion joint would have been improper, but since the pour was delayed, he felt the work was acceptable.

Attachments: Exhibits I through X