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**PUBLIC  
SERVICE  
INDIANA**

May 2, 1980

S. W. Shields  
Vice President - Electric System

Mr. Gaston Fiorelli  
U.S. Nuclear Regulatory Commission  
Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Docket Nos.: STN 50-546  
STN 50-547

Construction Permit Nos: CPPR-170  
CPPR-171

Dear Mr. Fiorelli:

SUBJECT: Marble Hill Nuclear Generating Station - Units 1 and 2

In accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, Public Service Indiana offers the following information, in addition to PSI's letters (DSN 1102795068 and DSN 0318806518) dated November 2, 1979 and March 6, 1980, respectively, in response to the items of noncompliance indentified in inspection report 50-546/79-09; 50-547/7909.

The purpose of this letter is to clarify Public Service Indiana's response of March 6, 1980, on the following items of noncompliance; 79-09-01 d, 79-09-02 c and 79-09-02 0. These clarifications were requested by Mr. Frank Hawkins, Region III Inspector during a site inspection, March 18 through March 21, 1980.

Item of Noncompliance (546/79-09-01; 547/79-09-01)

1. The Region III Inspector determined that QC inspection personnel had not adequately performed preplacement inspection specifically:
  - 1d. July 10, 1979 - The vertical construction joint contained embedded contaminants (i.e., visqueen and styrofoam material) and areas of apparent honeycomb extending from the top of the vertical construction joint to the bottom around the projecting horizontal reinforcing steel.

Corrective Action Taken and Results

- 1d. Joint was prepared to meet Specification Y-2722, Section 411, then reinspected and accepted by Newberg-Marble Hill.

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Corrective Action to Prevent Recurrence

- ld. In addition to the action described in lc. (March 6, 1980, response) Newberg has included construction joints as a hold point for inspection and will prepare construction joints in accordance with ACI 301, Chapter 6, (i.e., waterblasting, bushhammers) for all Category I concrete when required by the drawings.

Date When Full Compliance Will be Achieved

- ld. Newberg-Marble Hill is currently revising their complete Quality Assurance Program. The implementing procedures to control work activities in the area of concrete construction are scheduled for completion by June 1, 1980. These implementing procedures will address the preparation and inspection of construction joints.

Item of Noncompliance (546/79-09-02; 547/79-09-02)

2. The following instances were noted in which design documents do not include appropriate quality standards, in that:
- 2c. S&L Specification Y-2722, Section 413.6.h. does not prevent the continued rapid discharge and placement of concrete during tightened sampling initiated as a result of concrete which does not meet specification.
- 2d. S&L Specification Y-2850, Section 406.3 does not provide adequate control to prevent the inadvertent use of nonconforming aggregate in that test results are not available prior to the use of such aggregate.

Corrective Action Taken

- 2c. S&L specifications provide a control limit (allowable limit) and a specification limit (extreme limit). Any concrete found to be beyond the extreme limit, is out of specification, and placement of the concrete is not allowed. In addition, five (5) consecutive loads which are tested outside of allowable limits but equal to or less than the extreme limits, can be placed. However, after five (5) consecutive loads are placed outside of allowable limits, concrete production is stopped until an adjustment is made at the batch plant to bring the results back within the allowable limits. The tightened sampling testing requirements provide additional control tests and cylinders to aid in the evaluation and acceptance of all concrete placed. Improved communications among the contractors and the addition of more qualified and specifically trained personnel should assure that the placement of concrete which is out of specification will be precluded.



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S&L has been instructed to revise Specification Y-2722 as follows:

Page four (4) through nine (9), 411.8Ag; Revise Article 411.8Ag to read as follows:

For tightened sampling, a sample will be taken from the next available truck whether or not its discharge has begun.

If test results of this additional sample are within the extreme limits and deviations are not directly attributable to the transport from the truck chute to the forms, the load is placed. Whether the test results are within the allowable limits or not, an additional sample will be taken from the next available truck and tested. If two (2) consecutive samples test within the allowable limits, normal sampling will be resumed. If, during tightened sampling, five (5) consecutive loads test outside the allowable limits, discontinue concrete production until corrections are made to bring results back within the allowable limits and discontinue concrete placement until all loads in excess of the original five (5) loads have been tested. Placement of these loads may continue only if the tests indicate results within the allowable limits of Paragraphs 413.1a, b, and c of Specification Y-2722. If the tests indicate results outside the allowable limits, then the concrete cannot be placed unless each individual load is adjusted to bring the results back within the allowable limits and retested. Any adjustments to the batches shall be accomplished in accordance with approved site procedures.

In addition, S&L Engineers have committed to evaluate an on-site Correlation Program, which will be established to study the fresh and hardened concrete characteristics (slump, air content, temperature and compressive strength) at two locations during production, delivery and placement of concrete. A procedure describing the on-site Correlation Program will be established and implemented for a trial period to determine the fresh concrete characteristics at the test lab versus the point of placement. Providing a reliable trend or correlation can be established, S&L may revise Specification Y-2722 to allow concrete sampling at the placement point, or other points coincident thereto (mixing point), as defined below:

Delivery Point - The point of discharge in the case of a truck agitator unit, or nonagitator unit when another conveying device is to be used to transport the plastic concrete to the placement point. Where a truck agitator unit is used in the transit of concrete, the delivery point and the mixing point are considered coincident when: (1) the delivery point is not more than a distance of two miles and a maximum



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of one-half hour in transit from the mixing point, and (2) the delivered concrete commences to be placed within a maximum of one-half hour from the time the transporting vehicle arrives at the delivery point.

Mixing Point - The point of discharge of plastic concrete from a central mix plant. For truck mixed concrete the mixing point and delivery point are defined as coincident.

Placement Point - The point of discharge of plastic concrete into the forms. Except for pumped concrete the placement point and the delivery point are considered coincident when five minutes or less is used in transit of the concrete from the delivery point to the placement point.

This proposed design change should minimize or eliminate the continued rapid discharge and placement of out-of-spec concrete during normal or tightened sampling, because in-process tests will actually be at the mixing point (when the mixing point is considered coincident to the placing point). Thus, acceptance and rejection of the in-process test results can be determined prior to discharge and placement of unacceptable concrete.

- 2d. S&L Specification Y-2850 does provide adequate control to prevent the inadvertent use of unacceptable nonconforming aggregates by periodic testing of aggregates from previously approved sources. (See note below.)

Since it is the contractor's responsibility to provide adequate measures to minimize nonconforming aggregate conditions, Newberg-Marble Hill Procedure WPN 7 shall be revised to require additional measures for separation of acceptable aggregates (from weekly tests) and newly delivered aggregates. Separation will be as necessary to allow weekly test results to be available prior to newly delivered stone being used for production. Daily record test results from aggregate samples taken from production stockpiles need not be available, once receipt acceptance test results are complete.

NOTE: Specification Y-2850, Inspection and Testing Services, references the concrete work Specification Y-2722. Both Specifications must be evaluated together to assess the adequacy of controls to prevent unacceptable concrete. The continuous process of testing aggregates includes initial tests to qualify the source and subsequent monthly and bi-annual testing to

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detect major material variations in the geology or mineralogy of the source. The remaining testing (weekly, daily) is necessary and desirable to detect trends and variations of the processing, handling and stockpiling of aggregate.

Presently the Specification Y-2850 requires daily aggregate tests (Section 406.2) during production from site stockpiles and random aggregate tests for new deliveries of aggregate. (These aggregate tests are described in ASTM C117, C136, C40 and C87). These tests, when run in strict conformance to ASTM standard methods, require twenty-four (24) to forty-eight (48) hours to complete.

S&L has committed to change the phrase in Specification Y-2850, Section 406.2 to read "daily during concrete production and weekly during delivery." In addition, at the restart of Category I activities, PSI is committing to take the weekly during delivery aggregate tests on a more frequent basis (as determined by PSI) until PSI attains a confidence level on the acceptability of delivered aggregates.

Section 406.3 will be revised to read "...If the aggregate fails any of the tests of Paragraph 406.2 a nonconformance report (NCR) shall be initiated, to determine the disposition of the nonconforming aggregates..."

This program as stated will provide assurance of the acceptability of aggregates prior to use and complies with the project's commitments to ANSI N45.2.5.

#### Corrective Action Taken to Prevent Recurrence

- 2.a-2.d Procedures or Specifications shall be revised as described above. Following issuance of these revisions, Newberg will perform documented training and indoctrination of its personnel.





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Date When Full Compliance Will be Achieved

2.a-2.d PSI is presently completing a constructibility review of Specifications Y-2722 and Y-2850. This review, together with the required changes to the contractors Quality Assurance Programs and the actions set forth above are scheduled for implementation June 1, 1980.

Should you have any questions, please contact us.

Sincerely,

A handwritten signature in cursive script, appearing to read 'S.W. Shields'.

S.W. Shields

CEC/dks

cc: E.R. Schweibinz, P.E.  
J.J. Harrison