

Report of Visit to Turkey Point Project

20 January 1971

Robert E. Philleo*

The morning was spent in the field office of the Florida Power and Light Company discussing plans for replacement of the dome concrete in Unit # 3 and reviewing such specifications for the work as were available.

Those present were:

R. C. Lewis	AEC Compliance
W. M. Gaines	FP & L
A. G. Weedman	Bechtel
J. E. Loenichen	"
S. A. Folsom	"
Robert E. Philleo	Corps of Engineers

In the afternoon the dome itself was inspected.

The following comments are pertinent to the morning discussion:

Specification 5610-C-60:

Section 4.9. The use of the Swiss hammer as described in this section is not feasible. It is implied that strength determinations by the Swiss hammer are the criterion for the extent of concrete removal. Actually, the strength of concrete is not an issue, and the use of the Swiss hammer on rough surfaces is questionable.

Specification 5610-C-61:

Section 2.3. The admixture to be used is described as a water-reducer. It is essential, if the proposed revibration technique is used, that the admixture be a retarder. While the particular material

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proposed for use is a water-reducer and retarder, some water-reducers do not retard. If a change in brands should be made, it is important to verify that the material actually used is a retarder.

Final Section. The use of curing compound following 14-days moist curing might be re-examined. The possible interference of bond between the concrete and elastomeric roofing material might offset any curing benefits.

Several items could not be ascertained by examination of available specifications. These included the use of rock anchors across the joint between old and new concrete, methods to be used to clean the reinforcing steel, and methods to be used for repairing tendons. In the discussion it was learned that there is a definite commitment to the use of rock anchors although the details are yet to be worked out, it is planned to use a high-pressure water jet for cleaning the steel as well as the concrete surfaces, and the criteria for repairing both bars and tendons have yet to be developed. Tests are underway on both damaged bars and wires but the results have not yet been formally reported.

The chief purposes of the inspection of the dome were to determine whether the concrete removal operations were satisfactory and to observe whether the surface of the remaining concrete was sufficiently accessible to permit cleanup by high-pressure water jet. During the inspection field personnel demonstrated the use of the Starret gage to determine the depth of indentations in the prestressing wires.

Conclusions:

1. The concrete removal operation is satisfactory.
2. While the dome is congested with reinforcing steel and cable sheaths, it will be possible to clean the exposed concrete surface with a high-pressure water jet. Final removal of powdery material from the low spots will be the principal problem.
3. Inspection of the reinforcing steel and prestressing tendons in place is feasible. It is an exacting and very detailed job, but it should be possible to obtain all the information necessary to apply the repair criteria yet to be developed.
4. The proposed concrete replacement plan is satisfactory.
5. The principal difficulty in placing concrete will be the protection of reinforcing steel from splash of grout or concrete placed below it. Since the concrete will be placed in thin layers with long delays between layers, there is a risk that the steel may be coated with hardened grout before it is embedded in concrete.