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G. W. Reinmuth, Chief, Technical Assistance Branch, RO

SPECIAL INSPECTION - FLORIDA POWER CORPORATION - CRYSTAL RIVER III
DOCKET NO. 50-302

On October 24-26, 1973 I accompanied W. S. Ryan on an inspection to the Crystal River Unit No. 3 facility. Because of the similarity in design of this containment to Crystal River and Three Mile Island, I was requested to review the construction procedures and the QA program for the construction of the ring girder. The objective of the inspection was to confirm that appropriate construction practices were used to prevent the formation of voids in the concrete in crucial areas of the ring girder, i.e., behind the bearing plates and in other areas congested by a large number of reinforcing bars.

The ring girder is 17'-6" high and is being poured in six lifts and in sixty degree segments. At the time of the inspection, the three bottom lifts had been poured (the bottom ten feet). Preparation for the fourth lift was underway during the inspection. To facilitate the placing of concrete in the constricted spaces of the ring girder, a special concrete mix was being used. The maximum aggregate size was limited to 1/2 inch and the concrete slump to four inches. Plexiglass windows were inserted in the steel forms at the location of the bearing plates to allow the Quality Control (QC) people to observe the placement of the concrete in critical areas.

The Quality Assurance (QA) records for the first three lifts were audited and the following items were noted as being outstanding:

1. The specifications requires that epoxy be placed on the surface of the older concrete before a lift of fresh concrete is placed upon it. The required 28 day strength of the concrete is 5000psi and the cube strength of the epoxy is required to be 8000psi. The QA records reveal that it was difficult to obtain the 8000psi specified in the specifications. Most of the test results were in the range of 7500psi. A resolution of this problem was delaying the pouring of additional concrete.

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We were informed that an engineering disposition of this problem had been made by Gilbert Associates. The disposition was reported to say that the epoxy was not required to be any stronger than the concrete. Supporting documentation will be available for the inspector to review at the next regular inspection of this facility.

2. It was found that NCR 511 dated September 13, 1973 has not been closed out. It was claimed by the QA personnel at the site that an engineering disposition had been made but that the documentation had not yet been received. This item will be reviewed at the next regular inspection of this facility.

If the care and control exercised by the licensee in the pouring of the first three lifts of the ring girder continues no construction problems should be experienced.

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