Arkansas Nuclear One, Emergency Cooling Pond
– Spillway Replacement
Russellville, Arkansas

YEAR COMPLETED
July 2006 – March 2009

PROJECT OWNER’S INFORMATION

PROJECT OWNER
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RIZZO Associates was retained to design a new concrete Spillway located downstream of the existing Spillway for the Arkansas Nuclear One (ANO) Emergency Cooling Pond (ECP). The ECP is located northeast of the main plant area and serves as the backup source of service water the NPPs following a loss of Lake Dardanelle. The ECP is the Ultimate Heat Sink.

In the original design, a spillway was constructed from articulated concrete blocks resting directly on impervious backfill. The Spillway is designed as Seismic Category 1. Water had been observed flowing through eroded channels created in the “impervious” backfill underlying the articulated concrete blocks.

Work completed by RIZZO included the following:

- Alternatives Analysis – Detailed study to evaluate repair alternatives considering owner/regulator requirements, permitting, construction cost, and service life, among other factors;
- A replacement spillway located downstream was selected due to construction cost, safety requirements during construction, and the need for the operation of the existing spillway during construction;
- Preparation of a Final Design Report documenting design and including all required supporting calculations;
- Preparation of Construction Drawings and Specifications in support of the selected repair alternative. The specification and construction details were developed from RIZZO’s in-house databases based on similar completed projects;
- Development of construction schedule and associated construction cost estimate. Estimates were prepared to evaluate the various options and a detailed cost estimate was prepared for the selected alternative for use in comparing and evaluating construction bids; and
- RIZZO provided Construction Management Services including selection of and retaining the Contractor and the Independent Laboratory. RIZZO provided a Construction Manager and on-site engineering supervision for all work.

The Construction was complete in December 2008. RIZZO worked with ANO to ensure that Quality Assurance requirements were met (safety related structure at a nuclear facility). Following construction, RIZZO prepared an as-built summary including updated construction drawings.

RIZZO Project Numbers: 05-3491, 06-3696 and 04-4009