



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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**FOR THE RECORD**

**NRC COMMENT ON NY DAILY NEWS STORY ABOUT  
INDIAN POINT NUCLEAR POWER PLANT LEAKAGE**

A June 25th New York Daily News story about leakage internal to the Indian Point 2 nuclear power plant (“Nearly 2M gallons of corrosive water leaked from Indian Point power plant”) correctly describes the U.S. Nuclear Regulatory Commission’s assessment of the problem as being of low safety significance.

However, there is some important additional context – provided to the Daily News but unfortunately missing from the article -- that would shed further light on the issues raised in the story.

The leakage in question occurs when the Buchanan, N.Y., plant shuts down for a refueling and maintenance outage about once every 2 years. In order to refuel the plant, about one-third of the fuel in the reactor is removed and replaced with fresh fuel.

Because that fuel is highly radioactive, it must be moved under water to provide proper shielding for workers. That is achieved by flooding up a cavity above the reactor as well as an adjoining fuel transfer canal, allowing a safe transportation path from the reactor to the plant’s spent fuel pool. The cavity has concrete walls with a metal liner.

When the reactor cavity at Indian Point 2 is filled with water – something that happens for about two weeks during these biennial outages – leakage results due to non-visible flaws in the liner. The leakage, which has been estimated at 2 to 10 gallons per minute, flows down inside the plant’s containment building, where it is captured by sumps at the structure’s base and pumped for treatment by a radioactive-waste treatment system.

The NRC has long been aware of this issue and has engaged the plant’s owner/operator, Entergy Nuclear, on its actions to address the problem. The issue was documented in a May 13, 2010, NRC inspection report; it has been evaluated during the agency’s review of a license renewal application for the facility; and it was reviewed by the Advisory Committee on Reactor Safeguards (ACRS), an independent body of experts that advises the NRC on nuclear safety matters.

The NRC requires that when nuclear plant operators identify a degraded condition, it is to be placed in the facility's corrective action program, be evaluated and a repair approach developed. Indian Point 2 has complied with these requirements, though the NRC acknowledges the corrective actions have not yet fully fixed the problem and must be pursued further.

At the same time, the NRC assesses risk and, as stated previously, the risk seen here is believed to be low.

To be more specific, a concern has been raised about the leakage evaporating and leaving behind a residue of boric acid, which could then corrode metal components inside the containment building. The water contains a certain amount of boric acid to inhibit fissioning. Boric-acid corrosion can, to be sure, pose a serious problem, as it did notably at the Davis-Besse nuclear power plant, where corrosion was identified on the reactor vessel head in 2002.

But there are differences between the circumstances that existed at Davis-Besse and those present at Indian Point 2. At Davis-Besse, water leaked from inside the reactor onto the vessel head, where the temperature was about 600 degrees. That caused the water to evaporate and leave behind sufficient boric acid to cause significant corrosion.

At Indian Point 2, the temperature is about 95 degrees, which means there is little evaporation occurring and the vast majority of the water is instead making its way to the sumps for collection and treatment. As such, only a very small amount of boric acid is left behind.

During each refueling and maintenance outage, the company implements controls to ensure that any potential boric acid from leakage is identified and cleaned up. These activities help ensure there are no large deposits of dry boric acid in the containment building that could affect pH control.

NRC inspectors inspect the containment building at the completion of each outage to independently verify the conditions inside the structure.

It's also worth noting that safety systems in the containment building must be tested at regular intervals, and visual observations are also made of these systems at that time. No concerns related to boric-acid deposits and/or corrosion have been identified through these tests to date.

Going forward, the NRC will continue to engage Entergy on the leakage issue while remaining vigilant in terms of any potential problems resulting from this condition.