



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

July 2, 2008

Mark G. Kowal Mail Stop 8 C2A  
Branch Chief  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Re: INDIAN POINT ENERGY CENTER – PROPOSED CHANGE TO  
LARGE BREAK LOSS OF COOLANT ACCIDENT SINGLE  
FAILURE CRITERION LICENSING BASIS**

Dear Mr. Kowal:

I read in the biweekly notice of applications and amendments to facility operating licenses involving no significant hazards considerations that the NRC staff determined the proposed revision to the licensing basis for the single failure criterion during a large break loss of coolant accident at Indian Point Units 2 and 3 (*Federal Register*, Vol. 73, No. 127, July 1, 2008, pp. 37503-37504) did not involve a significant hazard consideration. I have also read the March 13, 2008, license amendment request (LAR) from Entergy seeking this change.

I do not contend that the proposed change does involve a significant hazard. Rather, I contend that the logic used by Entergy and endorsed by the NRC staff is quite simply wrong. It is factually incorrect and technically unsupportable. Thus, the NRC staff's conclusion seems reliant on bogus information. You might want to fix it and then see if this proposed change truly involves no significant hazards consideration.

The issue involves Entergy's fix to GSI-191, the containment sump problem. As Entergy described in their LAR, Indian Point Units 2 and 3 each have an internal containment sump and a backup containment sump. During a large break loss of coolant accident (LBLOCA), Entergy's analysis showed that the amount of debris generated and transported to the internal containment sump will not prevent sufficient water from reaching the emergency core cooling systems (ECCS). However, Entergy's analysis showed that the debris reaching the backup containment sump within the first 24 hours of a LBLOCA could prevent sufficient water from reaching the ECCS. Thus, if a single failure within that first 24-hour period is postulated to disable the internal sump to ECCS pathway, the backup containment sump pathway could also be lost leaving no credited supply of water to the ECCS. That would be bad.

To remedy this situation, Entergy's LAR seeks to redefine the single failure criterion such that the passive failure of a pipe or valve is considered credible during a LBLOCA only after that first 24-hour period. This 24-hour grace period provides sufficient time for debris to settle such that the installed barriers can adequately protect the screens for the backup containment sump and ensure adequate supply of water to the ECCS.

Entergy's LAR justified this 24-hour grace period by citing verse and chapter from NRC memo SECY-77-439 (August 1977). Entergy seeks to redefine its licensing bases so that only active failures are assumed to occur within the first 24 hours; after 24 hours, the assumed single failure could either be active or passive.

Entergy's reasoning is seriously flawed. They seem to have forgotten, or conveniently ignored, the whole point behind NRC's Generic Letter 2004-02 that prompted them to address GSI-191. In August 1977 when NRC issued SECY-77-1977, the NRC's position on containment sump screens was provided in Regulatory Guide 1.82, which among other things said that licensees could satisfy ECCS availability during LBLOCA recirculation mode by simply assuming 50 percent blockage of their containment sump screens and calculating pressure drop to the ECCS pumps for a NPSH evaluation. The lack of reality associated with that Reg Guide 1.82 regulatory position was the reason Generic Letter 2004-02 was issued. If that regulatory position were valid today, Entergy would not have modified Indian Point Units 2 and 3 and would not be revisiting the containment sump design and licensing bases.

Entergy's reliance on published words from SECY-77-439 is as nonsensical and invalid as would be its reliance on the words published in Reg Guide 1.82 circa August 1977. Reality does not support either set of published words.

Consider the sheer absurdity of Entergy's stated position that passive failures are incredible within the first 24 hours of a LBLOCA event but credible thereafter. Many safety analyses look at the first 100 days following a postulated accident. With all things being equal, the odds of a passive failure occurring during the first day of a LBLOCA event would be significantly lower than the odds of that passive failure occurring during the remaining 99 days of a 100-day mission time. But things – at least in the real world – are definitely not equal. The stresses on piping and valves from elevated temperatures and pressures during the first day of a LBLOCA event are significantly higher than the stresses from lower temperature and pressures during the remainder of the 100-day period. With reality dialed into the equation, the passive failure seems as likely, perhaps even more likely, to occur within the first 24 hours of a LBLOCA than thereafter.

Absent dependence on the non-real wording from SECY-77-439, Entergy has no technical basis for its assertion that passive failures that are entirely credible after 24 hours are entirely incredible before then.

There may very well be sound, logical, technically-supportable reasons why the proposed change involves no significant hazards. But neither Entergy nor NRC have identified them thus far.

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The Union of Concerned Scientists urges the NRC staff not to grant this license amendment request on flawed grounds.

Sincerely,

A handwritten signature in cursive script that reads "David A. Lochbaum". The signature is written in dark ink and is positioned above the typed name and address.

David Lochbaum  
Director, Nuclear Safety Project  
Union of Concerned Scientists  
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