From: Jerry Cuttler [mailto:jerrycuttler@rogers.com]
Sent: Friday, October 12, 2012 5:15 PM
To: Consultation
Subject: Comments from Dr. Cuttler FW: Invitation to comment on draft
guidance GD-337, Guidance for the Design of New Nuclear Power Plants

Hi Folks

I read through DRAFT GD-337 hoping to find clarification on the
requirements that appear in RD-337 version 2, Section 8.4 on Means of
Shutdown.

1. I understand the following requirements:

"The design shall provide means of reactor shutdown capable of reducing
reactor power to a low value, and maintaining that power for the
required duration, when the reactor power control system and the
inherent characteristics are insufficient or incapable of maintaining
reactor power within the requirements of the OLCs.

The design shall include two separate, independent, and diverse means
of shutting down the reactor.

At least one means of shutdown shall be independently capable of
rendering the reactor subcritical from normal operation, in AOOs and in
DBAs, and maintaining the reactor subcritical by an adequate margin and
with high reliability, for even the most reactive conditions of the
core."

However, I do not understand the requirement below very well. I was
expecting the DRAFT GD-337 to explain this.

"At least one means of shutdown shall be independently capable of
quickly rendering the nuclear reactor subcritical from normal
operation, in AOOs and DBAs, by an adequate margin, on the assumption
of a single failure. For this means of shutdown, a transient
recriticality may be permitted in exceptional circumstances if the
specified fuel and component limits are not exceeded."

Since it is assumed that one means of shutdown could fail unsafely, why
is the other means of shutdown not required to have the same
performance capabilities as required for means of shutdown that failed?

2. I understood from the meaning of AOOs, that they are to be managed
by the reactor control system, not by the safety systems (the means of
shutdown). And I understood that if the reactor control system is
incapable of controlling an AOO then the event is not an AOO but really
a design basis accident (DBA). So, the reactor trips should be for
DBAs (and DECs), not for AOOs and DBAs. However, RD-337 states in
Section 8.4.1 that reactor trips are to be initiated for AOOs and DBAs.
GD-337 does not clarify the confusion created by requiring the safety
system to trip for AOOs (in addition to DBAs).

Please clarify in GD-337 or revise RD-337 to remove AOOs from the role
of safety systems.

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