Date: May 18, 2017

To: RSC, A. Zaltsman, A. Fedotov and P.K. Feng

From: D. Beavis

Subject: Contactor Failure at LEReC

The RSC has been requested to review the criteria used to determine if reachbacks are required for all critical devices on May 19, 2017. In addition, the committee has been asked to consider how maximum credible incidents are evaluated for HV/RF devices. A recent failure occurred earlier this week that may be pertinent to the discussion.

On Wed. May 17, 2017 a contactor used by the access controls for the LEReC 704 MHz cavity failed in an unsafe manner. The contactor was installed with status detection and a reachback device (a switch in the RF waveguide) was activated when the contactor failed. Therefore, there was protection by two systems. The other contactor in the power feed did not fail.

A previous contactor used for the warm 704 MHz cavity failed several weeks ago, and may have failed in a similar manner. These two contactors along with a third were purchased together and were identical contactors. The third contactor is being used as part of the redundant critical devices for the 2.1 GHz cavity. The contactor was inspected and found to be in “perfect” condition. The cavity had been RS LOTOed off but after inspection the RS LOTO was allowed to be removed.

The 704 MHz warm cavity has been RS LOTOed off. There is no appropriate spare contactor to use in the system. A set of new contactors from another vendor were ordered several weeks ago and are expected to arrive later this month.

The engineers are examining the various devices and will try to determine the cause for the failures. Contactor failures have been very rare in the interlock system so two failures of the same type of contactors in the same system raises many possibilities. Rather than speculate I will suggest that the committee wait till the engineers have more time to make a more definitive determination of the cause.