

May 30, 2002

Dr. Mamdouh El-Shanawany
Chairman, SETH Management Board
Health and Safety Executive
Nuclear Installations Inspectorate
Nuclear Safety Directorate
St. Peter's House - Room 311
Bootle, Merseyside L20 3LZ

Dear Dr. El-Shanawany:

The NRC would like to propose a new set of PANDA tests for the SETH program review group and management board to consider. The NRC proposes to significantly reduce the number of large scale separate effects tests and to substitute with two complete integral facility tests. Companion integral testing will be performed in NRC sponsored tests at the PUMA facility with data made available to the SETH participants.

The current SETH test program at PANDA contains 24 separate effects tests of multi-gas single phase plume mixing and stratification phenomena. The NRC believes this type of testing could be accomplished in smaller scale facilities with much higher data resolution using liquids, for instance, to preserve scaling. The large volumes of the PANDA facility are not ideal for detailed three-dimensional separate effects testing. The NRC proposal to run integral tests will utilize the PANDA facility for its designed purpose.

Two integral tests are proposed for the PANDA facility with limited re-configuration. The tests are not system specific but should use all of the features of the PANDA facility including the dry well, wet well, passive containment cooling system (PCCS), gravity driven safety injection system, and the automatic depressurization system. These data would be useful for code validation purposes. The companion PUMA tests would add value to the data by covering a range of scales. A scenario similar to a main steam line break is proposed with all containment systems operable. Pre-test integral system type calculations would be performed to define the initial conditions for the test. A second test is proposed to begin with the conditions of the first and proceed with degraded PCCS performance. Details of these tests would be defined by the SETH program review group.

In recent Email communications with the PANDA test team (reference Joerg Dreier), a series of integral PANDA tests was referenced.

Dr. El-Shanawany

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As a participant in the SETH agreement, the NRC would like to have access to this data. If these data are not available, we propose that these new integral tests be performed and made available to the SETH participants.

Sincerely,

Original signed by F. Eltawila

Farouk Eltawila, Director

Division of Systems Analysis and Regulatory Effectiveness
Office of Nuclear Regulatory Research

Dr. El-Shanawany

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