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ERRATA SHEET

Report Number: NUREG/CR-3988

Report Title: MARCH 2 (Meltdown Accident Response Characteristics) Code Description and User's Manual

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Instructions: The attached page 2-27 should follow 2-26 of this report. It will be replacing page 3-27 which was incorrectly placed behind page 2-26.

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desired, the switchover from one model to another can be accomplished based on calculated conditions, e.g., debris temperature or particle levitation. The production of hydrogen from steel-water reactions has been incorporated into these models in addition to the zirconium-water reaction previously available. Also included are the heating of the evolved gases by the debris beds and the effect of hydrogen flow on bed flooding.

The containment response modeling in MARCH 2 includes the following principal changes: provision for expanded blowdown input, the ability to accept two input terms from the primary system, completely revised treatment of burning of combustibles, addition of a heat sink for radiation heat transfer from the debris in the reactor cavity, and removal of a number of restrictions in the earlier code.

The expanded blowdown table input capability is intended to facilitate the interfacing of the MARCH code with more detailed thermal hydraulic codes that may be used to describe the initial portion of the accident sequence.

The containment response subroutines (MACE) have been changed to accommodate simultaneous break and relief/safety valve flows from the primary system. The two inputs can be directed to different compartments if desired, e.g., break flow to the drywell and relief/safety valve flow to the suppression pool of a BWR.

The treatment of combustible gases now includes consideration of the burning of carbon monoxide as well as hydrogen if their concentrations exceed flammability limits. Included are explicit considerations of inerting due to high steam concentrations and oxygen depletion, direction-dependent compositions for flame propagation between compartments, and burn velocities as functions of composition. A variety of options are available to explore the effects of the various assumptions regarding the burning of hydrogen and carbon monoxide.

A heat sink has been provided for the thermal radiation from the top of the core debris as calculated by the INTER subroutines. The decomposition of concrete due to the radiated heat flux is treated by an ablation-type model with the resulting gases added to the containment atmosphere. Also, the geometry of the corium-concrete mixture can be fixed following solidification of the melt.