UW—MADISON RCCS EXPERIMENT

RELAP5 MODEL DATA BOOK

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1 Overview

All of the models to be discussed are based on the same basic diagram.

2 The Models

All of the major models that have been developed and used for simulation are documented in this section. This data book will serve as a manifest for all major components in the RCCS models including: flow areas, lengths, volumes, loss coefficients, heat structure information, etc.

For this data book, "components" refers to a collection of RELAP5 cards and models associated with a specific, physical portion of the experiment. For example, "riser" components consist of both their hydrodynamic volumes and heat structure piping; the actual cards associated with those separate models will be given in the description.

2.1 Scherrer's Model

This model was developed by Robert Scherrer for the Master's Thesis and has formed the basis of all future RELAP5 models for RCCS experiment simulation.

2.1.1 Simulation Metadata

- Options
  - 53: Invokes Henry-Fauske choking model instead of the (default) Ransom-Trapp
- Hydrodynamic Systems
  - RCCS
    - Thermodynamic fluid: Water
    - Elevation Reference
      - Center of Volume: 950010000
      - Absolute Elevation: 0.0 m
  - Box
    - Thermodynamic fluid: Air
    - Elevation Reference
      - Center of Volume: 101010000
      - Absolute Elevation: 0.0 m

2.1.2 Tank Component

2.1.2.1 SubComponent ID 980