Exhibit SHN-028

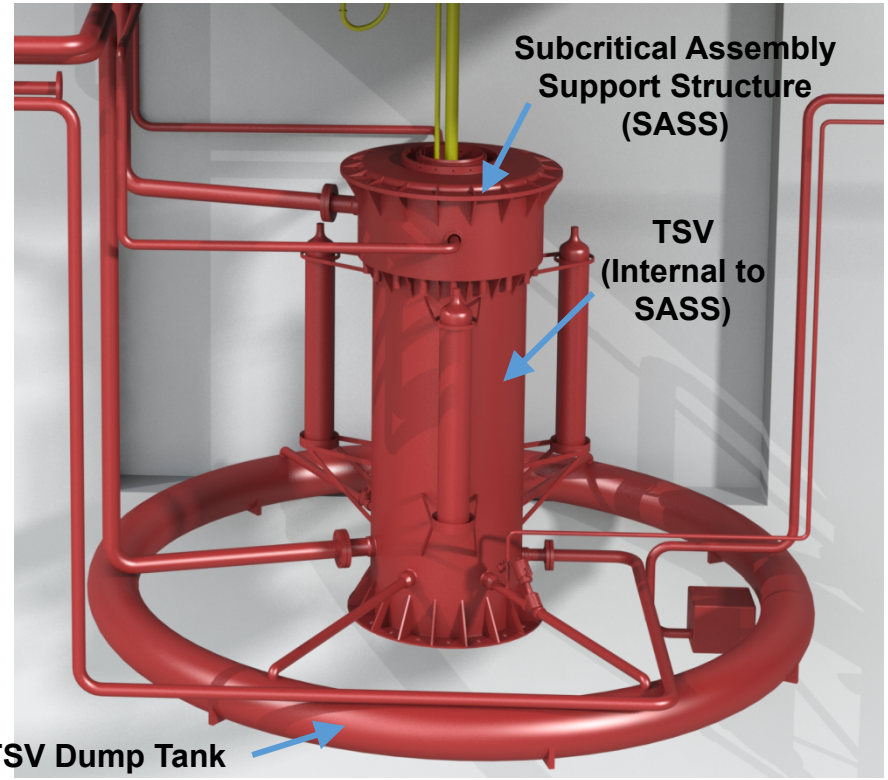
Commission Mandatory Hearing
SHINE Construction Permit Application
Safety – Panel 2
Accident Analysis
December 15, 2015

Accident Initiating Events and Scenarios

- Bases for identification of accidents:
  - Hazard and Operability Study (HAZOPS)
  - Preliminary Hazard Analysis (PHA)
  - List of events from NUREG-1537 and the Interim Staff Guidance (ISG) augmenting NUREG-1537
  - Experience of the hazards analysis team
  - Current preliminary design information
- Qualitative evaluations within categories
  - Quantitative evaluations to determine consequences
- Postulated an irradiation facility (IF) and radioisotope production facility (RPF) Maximum Hypothetical Accident (MHA)
  - Establishes an outer limit consequence, bounds other accidents
  - Most limiting MHA was in the RPF (“Facility MHA”)

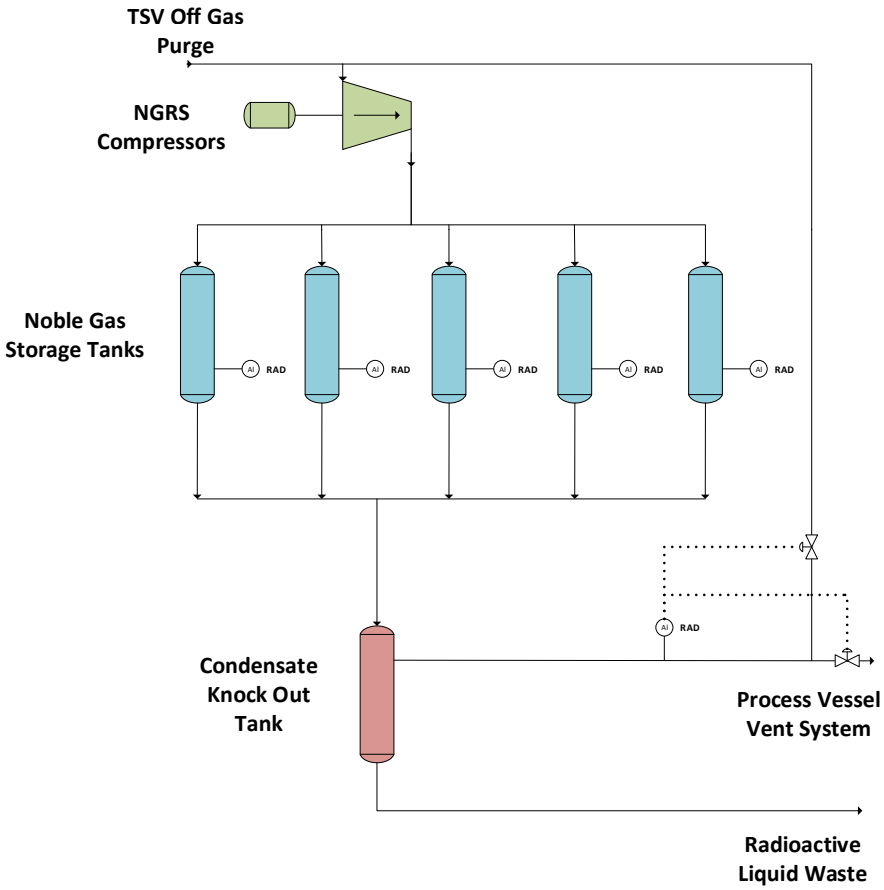
IF Postulated Maximum Hypothetical Accident

- Target solution vessel (TSV) and subcritical assembly support structure (SASS) integrity lost, target solution spills into irradiation unit (IU) cell
  - Maximum inventories assumed in TSV
  - Pool presence ignored
- High radiation detected, initiates alarms and confinement
- High efficiency particulate air (HEPA) filters and charcoal adsorbers credited
- Dose consequences
  - Worker TEDE: 3.1 rem
  - Public (site boundary) TEDE: 0.017 rem



RPF Maximum Hypothetical Accident (Facility MHA)

- The five noble gas storage tanks rupture simultaneously
  - With the maximum inventory
  - Contents are instantly released
  - High radiation levels initiate alarm and cell isolation
- Redundant isolation dampers close
  - 10% of the activity bypasses the isolation dampers
  - 10% of the activity leaks through penetrations



RPF Maximum Hypothetical Accident (Facility MHA)

- Dose consequences
  - Worker TEDE: 3.6 rem
  - Public (site boundary) TEDE: 0.082 rem
- The MHA consequences are conservative
  - Simultaneous, instantaneous rupture
  - Entirety of noble gas is transferred and released
  - The five tanks are filled to capacity
  - Additional ventilation isolation dampers would close, but are not credited
- Actual doses would be lower
- Radiological consequences to workers and the public are within the limits of 10 CFR 20.1101, 20.1201, and 20.1301