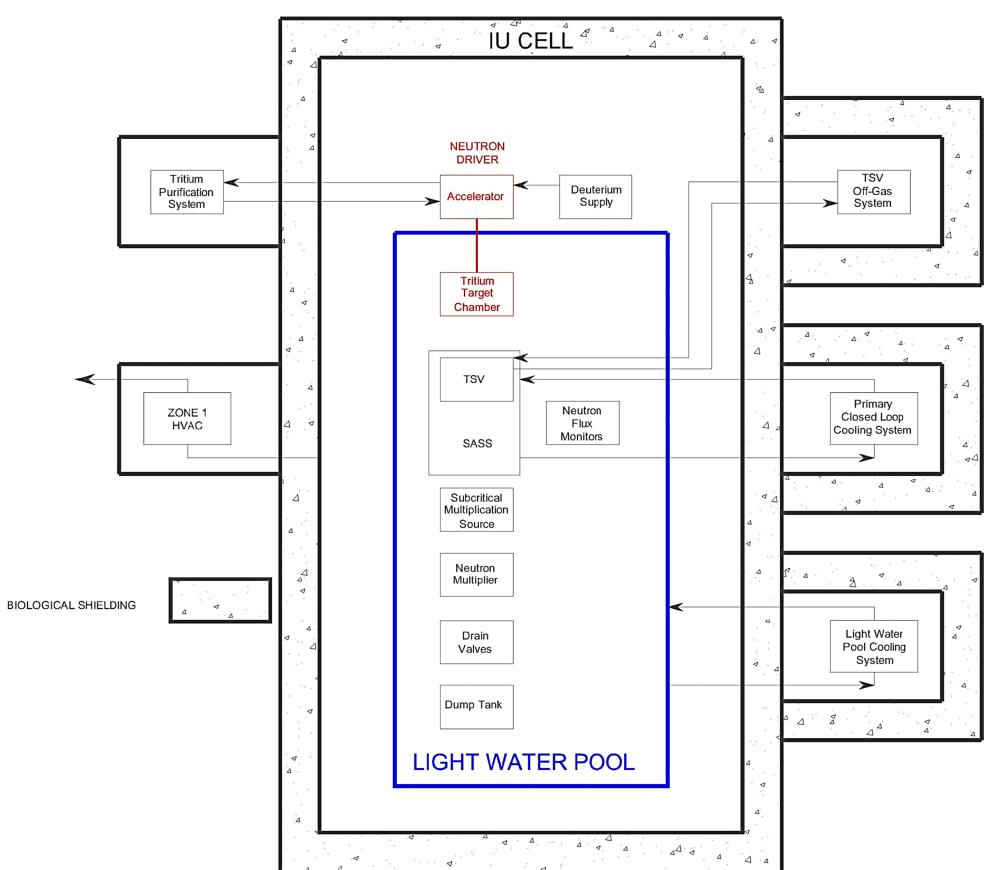
Figure 4a2.1-1 – Irradiation Unit Cell Schematic



### Figure 4a2.1-2 – Subcritical Assembly

Proprietary Information – Withhold from public disclosure under 10 CFR 2.390(a)(4)
Security-Related Information – Withhold under 10 CFR 2.390



Proprietary Information – Withhold from public disclosure under 10 CFR 2.390(a)(4) Security-Related Information – Withhold under 10 CFR 2.390

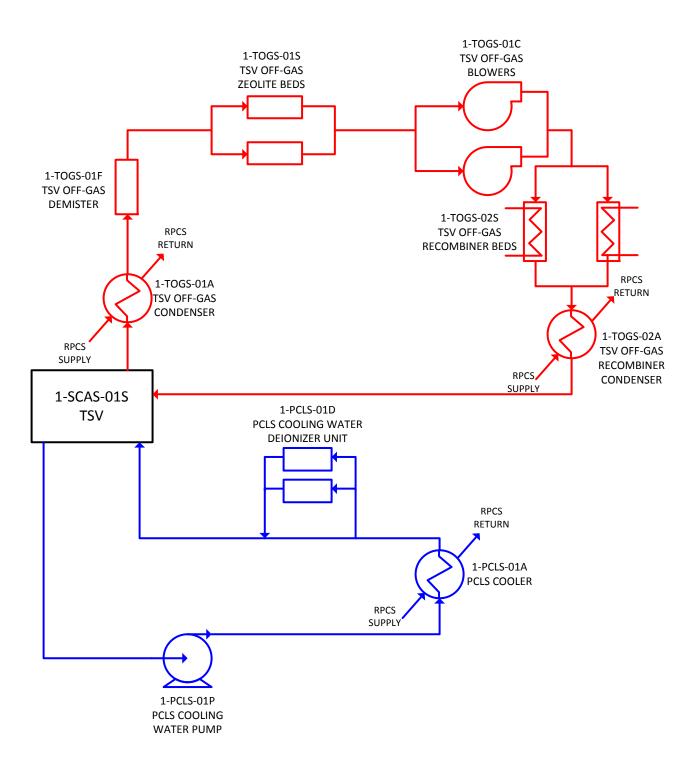
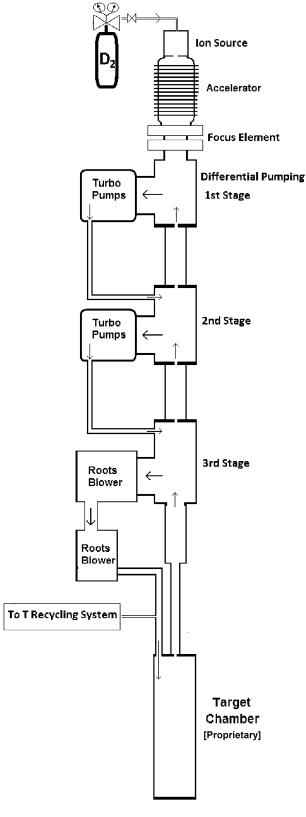


Figure 4a2.2-2 - TSV Interface during IU Operations



# Figure 4a2.3-2 – Solid Model of 300 kV Direct Injection Accelerator

Figure 4a2.3-3 – Schematic of the Differential Pumping System as Built at PNL



### Figure 4a2.4-1 – Irradiation Unit Decay Heat Curve

# Figure 4a2.7-1 – PCLS Stream Table

# Figure 4a2.7-2 – LWPS Stream Table

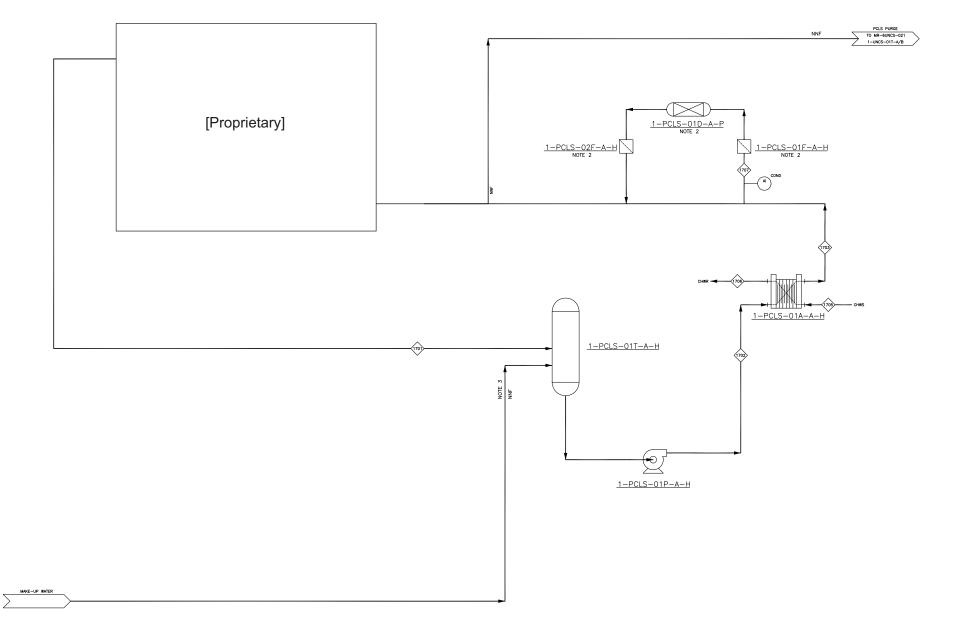
### Figure 4a2.7-3 – PCLS Process Flow Diagram

-PCLS-01T-A-H 1-PCLS-01D-A-P 1-PCLS-01P-A-H 1-PCLS-01A-A-H 1-PCLS-02F-A-H 1-PCLS-01F-A-H POLS FOLIER 1 POLS FALTER 1

### NOTES:

# [Proprietary]

- 2. THE COOLING WATER WILL FLOW THROUGH THE FILTERS AND DEDINIZER WAS SUP STREAM TO REMOVE PARTICULATES AND CATIONS FROM THE COOLING LOOP, A CONDUCTIVITY PROPE WILL INDICATE THE CATION LOADING IN THE SYSTEM. A STANDBY DEI
- 3. THE MAKE-UP WATER LINES ARE UTILIZED DURING START-UP OPERATIONS TO FILT THE COOLING SYSTEM LOOP. DURING NORMAL TOUR THIS LINE WILL ONLY BE USED IF MAKE-UP WATER IS REQUIRED. A BACKFLOW PREVENTER IS NOLUDED ON THIS LINE TO PREVENT POSSIBLE CONTAMINATED LIQUID FLOWING BACK MITO THE MILES.



# Figure 4a2.7-4 – LWPS Process Flow Diagram

1—LWPS—01A—A—H UDGHT WATER POOL COOLING POUND FURTER 2

LIGHT WATER POOL COOLING POUND FURTER 2

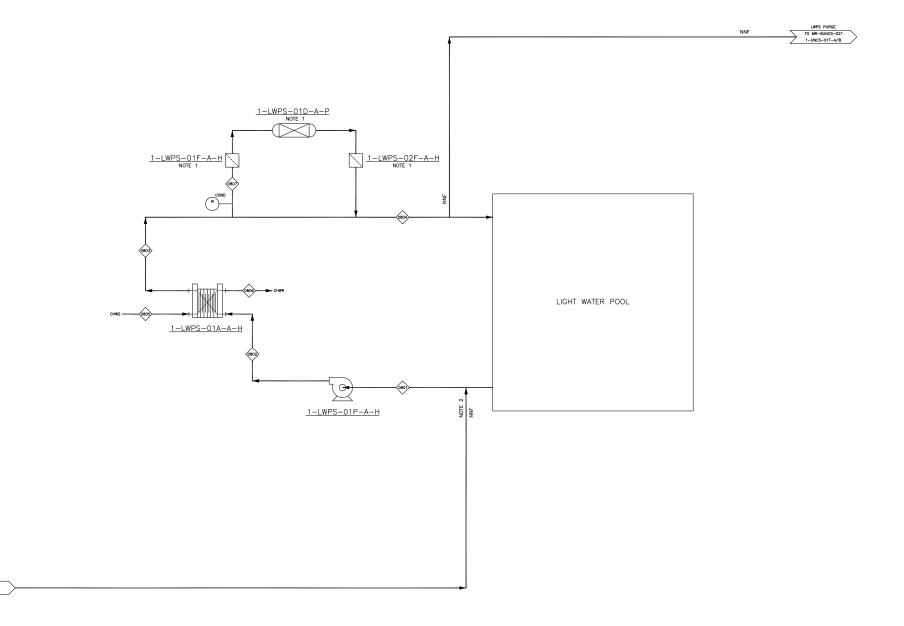
LIGHT WATER POOL COOLING COOLING POUND FURTER 2

LIGHT WATER POOL COOLING LOOP FILET 2

LIGHT WATER POOL COOLING LOO

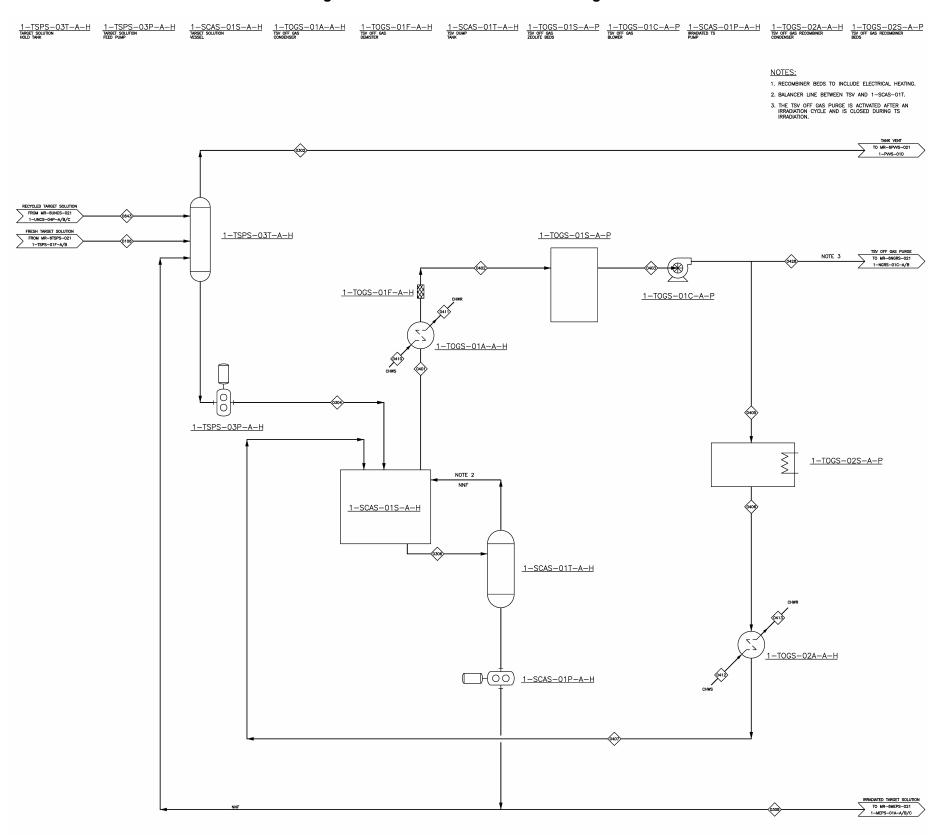
#### NOTES:

- THE COOLING WATER WILL FLOW THROUGH THE FILTERS AND DEIONIZER VIA A SLIP STREAM TO REMOVE PARTICULATES AND CATIONS FROM THE COOLING LOOP. A CONDUCTIVITY PROBE WILL INDICATE THE CATION LOADING IN THE SYSTEM. A STANDEY DEIONIZER IS INCLUDED. THE FLOW RATE THROUGH THE WATER TREATMENT LOOP IS THE
- 2. THE MAKE-UP COOLING WATER LINE IS UTILIZED DURING STATET-UP OPERATIONS TO FILL THE COOLING SYSTEM LOOP. DURING NORMAL OPERATION THIS LINE WILL ONLY BE USED IF MAKE-UP COLING WATER IS REQUIRED. A BACKFLOW PREVENTER IS INCLUDED ON THIS LINE TO PREVENT POSSIBLE CONTAMINATED. LIQUID



DRAWING SC

Figure 4a2.8-1 – TOGS Process Flow Diagram



### Figure 4a2.8-2 - TOGS Layout Sketch

Proprietary Information – Withhold from public disclosure under 10 CFR 2.390(a)(4) Security-Related Information – Withhold under 10 CFR 2.390