

Readiness of WT and related plants (TG6)

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Situation of Water drain

- ✓ 3 Tests of water drain performed dec 09, jan10, feb10 immediately followed by meeting with LNGS tech staff & director: Purpose
 - ❖ Check the drain plant HW
 - ❖ Check the drain flow rate of both pipelines through the “new” LNGS main drain to Teramo side (line 1 design flow rate $Q_n = 45$ l/s) & toward GNO pit (line 2 design flow rate $Q_n = 17$ l/s)
 - ❖ Obtain the authorization from LNGS to fill WT.

Outcome

- ❖ Passive flow reductor do not match specifications: sent back to company for modification (Q_n 17 and 50 l/s respectively) on 11feb010. The installed flowmeter doesn't work with demi-water.
- ❖ **Verified both discharge lines.**
 - ❖ Toward Teramo: **drain at 60-80 l/s OK without flooding TIR tunnel and/or motorway tunnel.**
 - ❖ Toward GNO pits: OK also start up of pumps, valve opening etc. (agreed automatic opening of valve with LNGS)
- ❖ **On 11 jan 010, obtained authorization from LNGS to drain**
 - ❖ in case of emergency at 80 l/s (line 1) + 17 l/s (line 2), i.e. ~1 h 40 min to empty WT
 - ❖ in normal operation at 20 l/s in line 1.
- ❖ **On 11 feb 010 obtained authorization of LNGS to fill prior**
 - ❖ Installation of water release valve pneumatic actuators (done CW8) and connection to compressed air source and PLC
 - ❖ Presence of diaphragm ($S = 17$ cm²) in the line to limitate the WT, in absence of flow regulators (shipping this week after modification), to be replaced by proper devices

Status of Plants

- ✓ Filling of demi-water from Borexino plants work fine at flow-rate $1.5 \text{ m}^3/\text{h}$. Thanks to Borexino water plant personel! 3 WT filling performed (2 and 4 m water column height in WT)
- ✓ Water Recirculation Plant (WRP)
 - Tested
 - On CW 8 WRP PLC connected through Ethernet port to the network to be readout by SC and integrated with cryostat PLC.
- Flow reductor $Q_n=80 \text{ l/s}$, to be installed in pipeline 1, expected in CW11
- Modified Flow reductors ($Q_n=17 \text{ l/s}$ and 50 l/s) expected in CW 9.
- Test of flow reductor and eventual pipeline reconfiguration (1 week)
- ✓ Pneumatic actuators of Water release valves installed on CW 8 (still manual operation).
- Connection to compressed: 2 weeks.
- Installation of redundant pipeline from WT to GNO pits driven by a GERDA pump foreseen to speed up release of last 2 m of water.