

**Dounreay Stakeholder Group (DSG)
Visit to Barrow in Furness to the MS “Oceanic Pintail”
4th March 2015**

DSG Members:

Tor Justad
David Broughton

Industry Members:

Anna MacConnell, Nuclear Decommissioning Authority (NDA)
Ben Todd, International Nuclear Services (INS)
Richard Walby Captain of “Pintail”, Pacific Nuclear Transport Limited (PNTL)
Deborah Ward (NDA)

Overall Objectives

1. The objective for the DSG members was to learn and understand:
 - the processes and equipment used by the crew of the “Pintail” in the carriage of nuclear cargoes
 - the design philosophy of the “Pintail”
 - the accident scenarios and mitigation measures
2. The objectives of the industry members, as observed by the DSG members, were:
 - to answer as many of the DSG members’ questions as possible without breaching any security sensitive issues
 - to ensure the DSG members appreciated the considerable amount of additional equipment built into the “Pintail” to ensure very high degrees of safety and redundancy
 - to ensure the DSG members understood the processes and manpower involved in operating the “Pintail”
 - to hope that the DSG members would have sufficient awareness of, and confidence in, the operations and structure of the “Pintail” to be able to pass this on in a positive way to other DSG members and working groups

Visit

3. The H&S briefing and security procedures to board the ship were straightforward and appropriate though we did notice that there was no security presence at the dockside itself.
4. We visited the bridge, the accommodation, the holds where the flasks are stored during transport and the engine room. The ship was built in the 1980s in Japan and the fitments and equipment mirror that period. We were given comprehensive briefings by the captain on:
 - The design of the ship with its double hull
 - The navigation systems
 - The location and tracking devices
 - The firefighting systems
 - The methods of holding down the flasks
 - The ultimate responsibilities of the captain
 - The crewing strategy

5. The ship is a “ship within a ship”. Its inner hull is some 2m in from the outer hull and this space can be sealed and acts as a “crush zone”. Seawater can be pumped between different zones of the crush zone to stabilise the ship should a serious collision which breached the outer hull occur. This is in addition to the normal ballast tank arrangements.
6. All engines, generators and equipment are doubled up for security and there are more generators than would normally be fitted to a standard ship of this size and duty. We observed a high level of housekeeping and maintenance.
7. Equipment for tug assistance is kept in place so that attaching towing cables and chains at the “Pintail” bow and stern at the time of an emergency is not required.
8. The position of the ship is monitored more or less continuously when at sea at two UK shore locations.
9. The ship is fitted with transponders that would give the position and attitude of the ship if it were to sink.
10. The flasks are bolted down to hold beams and the torques of the nuts/bolts checked each day.
11. The ship can carry 20 flasks but the usual load is well below this.

Crewing

12. The crew numbers are about double that for a normal cargo ship of this type and size. Also the seconds in command and second engineers carry master’s and chief’s tickets respectively so that they can step up if required. This is of course not unique in the maritime industry. The doubling up of equipment and personnel provides a very robust unit for carrying nuclear cargoes.
13. Armed CNC officers are on board when nuclear cargoes are being carried.
14. The captain has complete responsibility for the ship and cargo. Responsibility for the nuclear flasks is taken as soon as the flasks are put in the hold and the lifting gear removed.
15. Owing to the nature of the contract with the Japanese utilities there is no time pressure on the captain and the trips are arranged to suit weather and operational factors not time or money. We were told that any future contracts would be on the same basis so that the captain was not under those pressures.

Ownership

16. The ship is owned by NDA
17. The ship is operated by INS on behalf of NDA
18. The ship is crewed by PNTL under contract to INS
19. The ship is serviced by SERCO under contract to INS

Accident Scenarios

20. INS carry out studies of possible accident scenarios including salvage operations. INS informed us that it finds difficulty in trying to scope realistic serious accident scenarios owing to the design of the ship, its crewing strategy and the inherent resilience of the flasks and nuclear material.
21. INS said that in discussion with salvage companies anything can be retrieved, it just depends on how much one wishes to spend.
22. The captain of the “Pintail” has authority to engage tug and salvage services by word of mouth in an emergency and INS has standing contracts with tug firms worldwide.

Observations

23. We observed a well designed ship, a well organised and confident ship's captain who thoroughly enjoyed his job. He spoke of the professionalism of his crew and the high regard he had for PNTL.
24. For people who have an engineering, scientific or marine background and are familiar with risk analysis methods then the visit gave, or would give confidence, that everything possible has been done to secure safety and security to carry nuclear cargoes and that the risk of an accident giving rise to a nuclear contamination incident is extremely low and well within the normal regulatory guidelines.
25. To people who have a deep seated concern about any form of nuclear transport, for whatever reason, then the possibility of an unpredictable cataclysmic event is, to them, a real possibility and scepticism about salvaging the nuclear cargo would most probably be also a concern.
26. For everyone though it would be beneficial to have information on studies done on the resilience of the flasks and their contents to prolonged immersion in sea water at different depths and locations around the UK.

Conclusion

27. The visit was very informative and there is no substitute for seeing the hardware and talking face to face with the operators.
28. Whatever peoples' personal viewpoints and conclusions of the visit then their views are worthy of discussion and note because they have actually seen the ship and learnt about its operations.
29. It was regrettable that more DSG members did not take up the opportunity.