

A544 NORM Facility



Overview

- BP currently undertake onshore oil drilling operations in the Wytch Farm and Furzy Island areas.
- During operations at these facilities equipment can become contaminated with Naturally Occuring Radioactive Material (NORM).
- BP has a need for a local radiological cleaning facility and the NUKEM Limited NORM Facility at Winfrith currently provides this.

Overview



Winfrith
Technology
Centre

Wytch Farm

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The Winfrith NORM Facility (Building A544)



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Storage Compound



- Compound has ~4,000 internally contaminated tubulars awaiting cleaning
- Operational demands prevent time to work on back stock

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Initial Project Scope

- Refurbish the redundant A544 building to modern standards
- Design and Build the Decontamination Facility
- Obtain Regulatory Approvals
- Negotiate lease with UKAEA
- Set up Safety Management System
- Recruit and Train Operating Team
- Operation of the Facility

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Environmental Authorisations

- A Discharge Authority from the Environment Agency is held for:
 - Gaseous discharge of very low levels of activity through high efficiency filters to an engineered discharge point outside A544 (presently we have a nil discharge to-date).
 - Transfer of conditioned solid Low Level Wastes to UKAEA for disposal at the DRIGG repository.
 - Transfer of aqueous wastes to UKAEA for processing through their active liquid effluent system (since September 2006 recycling system has negated this discharge requirement).
 - Transfer of solid and organic liquid low level wastes to Authorised Contractor for incineration at their licensed facility at Fawley.
- In Drum Compaction utilised to reduce waste volumes.

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The Winfrith NORM Facility

- The decontamination process utilises Ultra High Pressure Water Jetting operating at 35,000 psi.
- A scabbling head is also utilised to remove hard scale prior to UHP Water Jetting.
- Work is undertaken in a ventilated and filtered Moducon containment.
- Liquid wastes are recycled through a separation and filtration system.
- Cleaned equipment is returned to BP for future use or disposed of as scrap metal

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Decontamination Operational Team

- Focussed Team
 - ATO Holder / Project Manager
 - Facility Manager
 - Working Supervisor / Waste Officer
 - Two Operatives
 - Health Physic Surveyor
 - Maintenance Engineer
- Throughput of 10 to 20 Internal Tubulars per day.
- Lifting Operations and Manual Handling require strict control.
- Noise and Hand/Arm Vibration monitored and controlled.
- Strict record keeping important to ensure traceability through the process.

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Process - Facility



- Handling Equipment
- Moducon
- UHP Pump
- Ventilation Extract
- Wash water recycling

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Operational Activities

- **Tubular Decontamination**
 - 5.5" to 2 7/8" size (up to 12m in length) both internal and external cleaning
- **ESP Pump Decontamination**
 - Involves strip out with Specialist BP Contractors
- **Module Decontamination**
 - Valves, Christmas Trees, Components
 - Can involve strip out with Specialist BP Contractors

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Process - Decontamination



- Receipt racks
- Processing racks

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Operational Activities



External Jetting Technique

- Kevlar Suit
- Breathing Air
- Twin trigger lance
- Supervised at all times

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NORM Related Activities

- **ESP Cable Stripping**
 - BP have ESP Cables (~1,500m long) where the armour is NORM contaminated.
 - Copper core and rubber insulation recovered for recycling.
 - NORM contaminated metal armour compacted and disposed as LLW to Drigg via UKAEA
- Major environmental driver for BP to dispose of cable reels
- Four reels completed, further three expected in 2008
- Parallel operation using only two additional operators

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NORM Related Activities



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Process – HP Monitoring



- Robust monitoring system
- Primarily “free release”
- Occasionally returned as exempt item with no loose contamination.

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NORM Related Activities

- **HP Surveyor Provision to BP Wytch Farm**
 - Call off contract to provide HP Surveyors to assist with workovers at Wytch Farm.
 - Requirement reduced recently following campaign to instruct site staff in basic radiological protection.

- **HP Instrument Calibration**
 - A58

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Opportunities

- Decommissioning of the BP Wytch Farm Site

- Operational Facility within the north North Sea market based in Scotland

- Oversea oil production companies

- Utilisation of the experience and technology in other market sectors

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