



Site Stakeholder Group

Hunterston B Station Director's Report
Period: November 2016 to January 2017

1. Safety and Environment

Key Developments

There are some key developments which have taken place out-with the reporting period but which are worth including in this report:

Hunterston Periodic Safety Review Approved by ONR

After extensive review and assessment, the nuclear safety regulator – the Office for Nuclear Regulation (ONR) – has approved the Periodic Safety Review for Hunterston B power station. This assessment notes the regulator's confidence in the station's safe operations, based on a review of operating procedures, safety cases and processes. Overall, the findings of the review and ONR's assessment confirm that the station meets current safety standards. It also notes the regulator's intentions to continue to challenge and assess operations through its normal mechanisms.

It is standard practice for Periodic Safety Reviews to cover 10 year periods of operations. This does not change our current lifetime expectations of 2023 for Hunterston B.

As well as the 10 yearly Periodic Safety Reviews; the individual sets of rules, plant systems and processes for each aspect of the plant's licence conditions and operations are continuously reviewed, inspected and checked.

If EDF Energy considered any aspect of the plant, operating rules or processes to be unsafe, or if we discovered inspection results we couldn't explain, our own strong internal governance would ensure that we took action well before the regulator would step in.

Despite these robust internal arrangements, this oversight is supplemented by strong independent challenge and review from the regulator, the ONR, to provide external assurance that we are always operating safely.

The regulator also assesses the ongoing safety of our plans and operations and has to give permission for each reactor to return to service every three years following its statutory maintenance shutdown.

This is a positive outcome and comes after continued work by our teams to demonstrate our safe practices to the ONR.

Interim outage

On 13th January, Reactor 3 was taken offline for its planned interim outage. The unit was successfully returned to service on the morning of Sunday 5th February. The outage lasted 22 days.

As well as excellent safety performance with no nuclear, environment or industrial safety top tier events or accidents, we successfully completed several maintenance activities and inspections during the outage. The main purpose was to build up our understanding on the graphite core ageing process and this was achieved. Our findings underlined that the graphite in our reactors is behaving as experts predicted it would. We therefore remain confident in our plant lifetime forecasts.

This latest inspection monitored the three graphite bricks within which cracks had been found in November 2015. As predicted, there has been no significant increase in their size since the last outage. Our modelling predicted that the most probable outcome of this inspection was that we would see between three and eight additional keyway root cracks. The results were within these predictions and we found three additional keyway root cracks. These results at this stage in the reactor life are within safety case margins and do not change our confidence that we can operate safely to 2023.

Nuclear safety drives everything we do and our reactors are operated with very large safety margins. This applies to graphite bricks too. The level of cracking which is considered reasonable is far below anything which would affect the reactor's safe operation. Safety cases assessed by the independent nuclear regulator, our own approach to safety and inspection programmes ensure that the reactor cores remain safe throughout their full operating life.

Station Industrial Safety Performance

In January 2017 we rolled out the "Safe Start 2017" campaign which included a virtual reality presentation. The video was filmed in and around Hunterston B using people who work on the station. During the campaign 621 people attended the virtual reality presentation which received positive feedback. You can read more about this project below.

There were no Lost Time Incidents* (LTIs) reported by EDF Energy or our contract partner staff during this period, The Total Recordable Injury Rate (TRIR) is currently 0. It has been more than eight and a half year since the last LTI at Hunterston B.

There were no Industrial Very Significant Incidents or Serious Incidents reports in this period.

In 2016 we had our best industrial safety performance with 13 accident book entries.

Achieving 0 TRIR injuries and 13 accident book entries in 2016 is a fantastic achievement; however, we must not become complacent and will continue on our journey towards zero harm in 2017.

Environmental Safety

There have been no significant environmental events in the period.

Radioactive gaseous and aqueous discharges arising from normal plant operations remain at levels well below those authorised by SEPA. By agreement with SEPA we have now started reporting in accordance with the recently revised authorisation requirements.

Work to process and package solid low level wastes has continued in the period as part of normal operations and consignments have been made to Hythe.

The programme of off-site environmental monitoring and radiation surveys in the district has continued as normal and demonstrates that the radiological discharges from the station have a negligible impact on the local environment. Reports are made quarterly to SEPA, detailing the samples and results of analysis performed.

Radiological Protection

During the reporting period the actual collective dose was above plan (see table below). Differences between the actual and planned dose can be down to a range of factors including changes to the work programme, development of new techniques for carrying out work that will result in a lower dose and the deployment of new equipment.

All work is fully reviewed and justified in order to ensure all doses received were ALARP (As Low As Reasonably Practicable). This involves justifying and optimising the dose, as well as remaining within those dose limits.

During this period an issue developed with the Irradiated Fuel Dismantling (IFD) cell. The IFD cell is a key part of our plant which allows the removal of spent fuel from the reactor. Due to the radiation hazard in this area we plan for two entries to the IFD cell each year. Consideration was given to whether the work could be delayed until the next planned entry but this would not have been appropriate. The work which had to be carried out was fully risk assessed and controlled through the company process and the dose received was ALARP. Without this work the actual collective dose would have been below plan and the highest individual dose was well below EDF Energy's dose restriction level.

The radiation dose of each worker is assessed individually by an electronic personal dose meter. A computer database keeps records for each worker. Exposure is constantly monitored and ultimately compared with the levels specified in the Ionising Radiation Regulations 1999 which is the UK Health and Safety legislation that applies to work with radiation.

We plan the collective dose expected for each year based on the work due to be carried out on the plant. A breakdown of dose received is shown below along with a comparison of relevant dose statistics.

There were no reportable radiological protection events during this reporting period.

Radiation Dose to workers (Nov 2016 – Jan 2017)		
Planned collective dose	26.0man.mSv	
Actual collective dose	31.9man.mSv	
Emergent IFD Dose	10.7man.mSv	
	Employee	Contract Partner
Total Dose	20.9man.mSv	11.0man.mSv
Average individual dose	0.05mSv	0.04mSv
Highest individual dose	3.8mSv	2.4mSv
Individuals	421	318

Chest X-ray	Transatlantic Flight	CT scan	Average UK annual dose to public	EDF Energy Dose Restriction Level	UK legal dose limit for radiation workers
0.014mSv	0.08mSv	2.0mSv	2.6mSv	10mSv	20mSv

Explanatory notes:

- mSv: milliSieverts (SI unit of dose received by an individual)
- man.mSv: The collective dose for a group of workers (i.e. the total of the doses received by each member of a group).

Emergency Arrangements

Information was requested at the SSG meeting in December about the distribution and use of stable iodine tablets within the Detailed Emergency Planning Zone (DEPZ).

There are 43 properties in the DEPZ. Each year they are issued with a calendar that outlines the actions they should take should there be an offsite release at Hunterston B. Copies of the calendar will be circulated on 2nd March for members to review.

The current stocks of stable iodine tablets are due to be refreshed in the spring and will be distributed door to door by NHS Ayrshire and Arran.

There was no activation of the Hunterston B emergency arrangements during the reporting period.

Exercises and training have continued to ensure we maintain readiness for an emergency response.

We have taken forward some enhancement on site to our emergency facilities and the focus at present is to commission a new alternative Emergency Control Centre (ECC2) on site.

2. Generation

Month/Unit	R3/TG7	R4/TG8
November	<ul style="list-style-type: none"> • The unit operated continuously at optimum power throughout the month. 	<ul style="list-style-type: none"> • The unit operated continuously at optimum power throughout the month.
December	<ul style="list-style-type: none"> • The unit operated continuously throughout the month. • Power was reduced for Low Load Refuelling from 4th – 9th. 	<ul style="list-style-type: none"> • The unit operated continuously throughout the month. • Power was reduced for Low Load Refuelling from 12th- 16th.
January	<ul style="list-style-type: none"> • 13th: The unit was safely shut down for a planned interim outage until the end of the month. 	<ul style="list-style-type: none"> • The unit operated continuously at optimum power throughout the month.

3. Company Update

First Minister opens new EDF Energy Centre in Edinburgh

First Minister Nicola Sturgeon has opened a new centre for EDF Energy Renewables in Edinburgh which will support the company's ambitious growth plans in Scotland.

During the opening ceremony, EDF Energy's CEO Vincent de Rivaz signed the Scottish Business Pledge, the Scottish Government initiative to boost productivity, competitiveness and the involvement of workers in businesses.

He also announced a new three-year partnership with Edinburgh International Science Festival as part of the company's wider programme to inspire Scottish youngsters to take up careers in science and technology and to boost skills and education.

EDF Energy is Scotland's largest generator of low carbon electricity, producing 40% of the country's electricity, employing more than 1,300 people and supplying Scotland's local authorities, schools, public buildings and hospitals.

Science & Tech Jobs will grow twice as fast as other occupations

A new study; 'Jobs of the Future' reveals that science, research, engineering and technology jobs will grow at double the rate of other occupations creating 142,000 extra jobs between now and 2023. This is the year girls currently choosing their GCSEs are expected to start entering the workplace.

The study from the Social Market Foundation (SMF) was commissioned by EDF Energy, as part of its 'Pretty Curious' programme to inspire more girls to consider science and technology careers.

EDF Energy has also launched a new virtual reality film to help girls see successful women at work in Science, Technology, Engineering and Maths (STEM) related careers.

Generic Design Assessment process starts for UK HPR1000 nuclear technology

The Department of Business, Energy & Industrial Strategy (BEIS) has today confirmed that the nuclear regulators have been asked to begin the Generic Design Assessment (GDA) for the UK HPR1000 nuclear technology.

This marks a first step in the robust and thorough process to seek permission to build a nuclear power station at Bradwell in Essex.

China General Nuclear Power Corporation (CGN) and EDF had submitted a joint application through their joint venture company GNS (General Nuclear System Ltd) to BEIS in October 2016 to begin the GDA process for a UK version of the HPR1000 nuclear technology.

The reference plant for the design is CGN's Fangchenggang Plant Unit 3 in China which is under construction and on schedule.

4. Station News

Safety a Reality for Hunterston B workers

Hunterston B power station is harnessing the latest technology to ensure people stay safe while on the job.

More than 600 workers at the station recently immersed themselves in a pioneering virtual reality experience filmed in and around the North Ayrshire station.



“A day in the life at Hunterston” was produced in collaboration with Cape and puts participants in the shoes of a worker who is struggling with personal issues but who stays safe through the help and support of his team.

Station Director, Colin Weir, said: “The virtual reality experience was part of the station’s recent ‘Safe Start’ campaign which runs each January and aims to help our people focus on staying safe during the coming year.

“Last year the station made great progress towards achieving EDF Energy’s ambition of Zero Harm but we cannot afford to be complacent. That is why it is great that we have been able to come up with a new way to get the safety message across.”

It is the first time the technology has been used for this purpose at any of EDF Energy’s power stations and now other sites are looking to use the film as well.

Quality Management Group Head, Greg Dunlop, oversaw the project. He said: “The film aims to make workers think about their personal safety when carrying out their jobs and the potentially life-changing implications of workplace accidents for family and friends.

“It was a complex project to work on but we have had lots of great feedback from staff with many saying the experience has left a lasting impression.”

Much of the film is based on site but scenes were also shot on location at employees’ homes in Largs and the Barony Centre in West Kilbride. More than 20 people from the station were involved in the production, including several in acting roles.

Lesley MacKay works at the station, she said: “It was great to see our own staff in the film. The reinforcement of the positive message of looking after one another is powerful and the term ‘fitness for duty’ means far more than being free from drink and drugs.”



5. Staffing Update

The station currently employs 499 full time staff, this includes 22 apprentices. The apprentice recruitment campaign for the 2017 intake is underway with testing completed and interviews to be arranged shortly. We are currently recruiting in the areas of Maintenance and Quality engineers. Hunterston B vacancies are displayed on the www.edf-energy.com web site.

For more information about anything in this report or other station issues, contact:

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6. Glossary of Terms

Term	Definition
Unit	A unit refers to one of the reactors at the power station and its generating turbine
Nuclear reportable event or incident	Nuclear reportable events are events reported to the Office of Nuclear Regulation (ONR) in compliance with EDF Energy's nuclear site licences.
Environmental event or incident	Environmental events arise from wastes or discharges above permitted levels or breaches of permitted conditions.
Lost Time Incident (LTI)	When a member of staff injures themselves at work, and is absent from work for one day or more, this is referred to as a lost-time incident (LTI)
Total Recordable Incident Rate (TRIR)	<p>Total Recordable Incident rate is the total number of Lost Time Incidents, Medical Treatment Cases, Restricted Work Cases and which is divided by the amount of total amount of man-hours and then multiplied by 1 million. This indicator is a 12 month rolling figure.</p> $((LTI+MTC+RWC)/manhours) \times 1000000 = TRIR$ <p>0.54 represents 1 Restricted Working Case during December 2015.</p>
Outage	A period during which a reactor is shut down. The periodic shutdown of a reactor including for maintenance, inspection and testing or, in some cases, for refuelling is known as a planned outage. In the UK, some planned outages are known as statutory outages and are required by the conditions attached to the nuclear site licence needed to operate the station. Unscheduled shutdown of a reactor for a period is known as an unplanned outage.