



Generation

Company Specification

Pandemic Contingency Plan

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 Design Authority
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006	Update in line with NP/SC 7803, Fleetwide Pandemic Safety Case.	Moderate	March 2020

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1. Purpose

The purpose of the pandemic contingency plan is ensure that Generation is prepared to limit the internal spread of a pandemic, to ensure no impact upon safety (nuclear, process, radiological, environmental and industrial) and, as far as is possible, to minimise the impact upon the continued operations of Generation sites.

Whilst safety remains the priority at all times, during a pandemic it may be appropriate to implement changed arrangements which raise the priority of continued generation over the priority of compliance with existing arrangements (Appendix B).

Due to the extent of the uncertainties associated with a pandemic, it is expected that this plan would be initially implemented with incomplete information and in the context of an evolving picture. Various assumptions and presumptions (Appendix C) have had to be made which will need to be reviewed and where necessary changed as the pandemic develops. Consequently the plan has been constructed to provide a framework from which a flexible response can be determined and coordinated.

Although this document primarily describes the arrangements for dealing with a pandemic, it can also be used as a framework for dealing with other events which might cause high levels of absenteeism.

2. Scope

The plan applies to all EDF Energy Generation business units, employees and locations where Generation has a dominant presence (i.e. the existing nuclear power stations coal and gas sites, Barnwood and East Kilbride offices). It also aligns with the wider EDF pandemic response arrangements.

The plan covers all phases of Generation response to a potential and/or actual pandemic, from the initial mobilization of the pandemic organisation through to the restoration of normal working arrangements once an outbreak has been declared over.

A pandemic is a global outbreak of an infectious disease, such as influenza, which:

- Infects humans over a large geographical area
- Spreads rapidly from person to person
- Causes clinical illness in a proportion of those infected

This Pandemic Plan contains the principles for the EDF Generation response to a potential or actual pandemic to address:

- Threats to the health and safety of our staff, contactors, suppliers, customers and members of the public
- Threats to the continuity of operations
- Threats to our commercial interests
- Damage to our reputation

Objectives

The primary and overriding objective of this plan is:

- To ensure the safety (Nuclear, Process, Radiological, Environmental and Industrial) of the nuclear fleet remains the Company's overriding priority.

This is supported by four further objectives:

- To maintain continuity of electricity and gas supply in support of the national infrastructure
- To maintain and support the welfare of our employees and partners.
- To continue as far as is possible with normal management arrangements for all aspects of site operation.
- To protect the commercial interest of the Business.

3. Responsibilities

Generation Business Continuity Coordinators

- Maintain the Generation Pandemic Contingency Plan with appropriate links to EDF plans and arrangements
- Coordinate pandemic planning with the EDF Head of Governance, Risk and Internal Control
- Support operational sites and department business continuity coordinators to include pandemic planning assumptions in local continuity plans
- Support pandemic exercises as deemed necessary
- Maintain a horizon scan of potential pandemic threats and escalate these within the business as appropriate

Head of Governance, Risk and Internal Control

- Maintain the EDF Pandemic Contingency Plan, with appropriate links to business unit level plans
- Support development of business unit level pandemic contingency plans and exercises
- Maintain a horizon scan of potential pandemic threats and escalate these within the business as appropriate

Nuclear Generation Head of Emergency Planning

- Support the development and maintenance of pandemic planning for nuclear generation with appropriate resource availability

CGR Head of Asset Performance

- Support the development and maintenance of pandemic planning for CGR with appropriate resource availability

Generation Safety, Security and Assurance Director

- Director level responsibility for ensuring that Generation has appropriate pandemic contingency arrangements in place

Generation Managing Director (or nominated deputy)

- Responsibility for activation of pandemic contingency arrangements in response to a recognised threat of a pandemic in the UK

EDF Energy Pandemic Working Group

- Monitor, coordinate and support action to manage the risks posed. Report impact to the Executive Team

Generation Pandemic Response Team

- Coordinate Generation specific response activities, monitor business unit impact and report to the Pandemic Working Group

Site Pandemic Response Team

- Coordinate site specific response activities, monitor site impact and report to the Generation Pandemic Response Team

Generation Pandemic Lead

- Senior management lead for the pandemic response appointed by the Managing Director, Generation
- Lead the Generation Pandemic Response Team
- Represent Generation at the Pandemic Working Group
- Report impact to the Generation Leadership Team

4. Practice

4.1 Plan Phases

As far as is possible Generation will carry on with its normal daily business, whilst adhering to UK Government advice, taking sensible precautions and adopting good hygiene measures. To ensure the response is effective and proportional the plan is divided into five phases:

- Phase A – Initial monitoring and mobilisation of the response organisation. The phase when the business becomes aware of the potential for a pandemic in the UK. During this phase the primary function of the response organisation will be to monitor the external environment, confirm lines of communications and ensure all business units are prepared for escalation should it be necessary. Business operations will be maintained as normal.
- Phase B – Heightened monitoring and full mobilisation of the response organisation. During this phase the response organisation will put itself onto a more formal footing. The external environment will be monitored closely, internal and external lines of communication

will be formalised, precautionary and educational/awareness raising actions will be initiated. Business operations will be maintained as normal.

- Phase C – Generation will move into this phase if the pandemic has or has a high potential to have an impact upon normal business. During this phase the response organisation will initiate a series of predetermined actions to minimise the potential impact of pandemic upon safe and continued operation. This phase may include a phased reduction in non-essential business operations in order to preserve and protect key personnel roles and functions.
- Phase D – Generation will move into this phase if the pandemic has or has the potential to have a significant impact upon business continuity including security of supply (i.e. widespread cases of the virus in the UK and/or inside the Company). During this phase the organisation will initiate further actions to minimise the impact of pandemic upon safe and continued operation. The organisation will focus on essential operations to ensure safety, in particular nuclear safety, is maintained.
- Phase E – Generation will move into this ‘recovery’ phase once the outbreak has been declared over and sufficient staff have returned to work to enable normal working arrangement to be restored. During this phase the response organisation will ensure a controlled transition back to normal business operations.

Note: The above phases take account of the UK Pandemic Response Plan Phases (Appendix A)

4.2 Plan Activation

Following reliable intelligence of a threat of a pandemic in the UK the Generation Managing Director or nominated deputy will declare the pandemic contingency plan active and appoint a senior member of the Generation Management Team to lead the pandemic response organisation.

If appropriate, the Managing Director will activate the plan immediately at a level higher than phase A.

Phase Transition

The decision to change from one plan phase to another will be taken by the Managing Director or nominated deputy having taken account of the advice from the Pandemic Response Team.

Should any nuclear power station Station Director, as Agent of the Licensee, determine that the circumstances at their station warrant an escalation of the Generation response they will require the Managing Director or nominated deputy to authorise the transition to a higher phase at their site. This may be necessary due to differences in the geographical spread of the pandemic.

4.3 Response Organisation and Command Structure

Following reliable intelligence of a threat of a pandemic in the UK an EDF Pandemic Working Group (PWG) will be set up to monitor, coordinate and support action to manage the risks posed. This will coordinate with individual business units and manage the strategic EDF response.

A Generation Pandemic Response Team will be established to develop tactics, actions and delivery of operations. Individual sites will establish a local Site Pandemic Response Team to coordinate the local response.

Incident Management Team

The Incident Management Team may be activated to support the strategic response for Generation.

The trigger points for activation of the Incident Management Team are shown in Appendix E.

Generation Pandemic Response Team

The Generation Pandemic Response Team will:

- Coordinate and monitor the effectiveness of the Generation response to the potential/actual pandemic.
- Continually assess and taken action to ensure safety, in particular nuclear safety, is maintained, and the continued operation of the nuclear fleet and thermal asset fleet.
- Monitor and take action to support the welfare of employees, partners and dependents.
- Ensure effective communication throughout Generation.
- Act as the focal point in Generation for regulatory and Government interfaces.
- Provide authoritative advice and assistance to business units as the situation develops.

Recommended membership of the Generation Pandemic Response Team shown in figure 1. Guidance, in the form of a checklist, is provided in Appendix F.

Site Pandemic Response Teams

The Site Pandemic Response Team will:

- Coordinate and monitor the effectiveness of the site response to the potential/actual pandemic.
- Continually assess and take action to ensure safety, in particular nuclear safety, is maintained, and the continued operation of the site.
- Monitor and take action to support the welfare of employees, partners and dependents.
- Ensure effective communication (and continued use of other Human Performance tools) throughout the site.
- Act as the primary interface with the Generation Pandemic Response Team.

Recommended membership of the Site Pandemic Response Team shown in figure 1. Guidance, in the form of a checklist, is provided in Appendix G.

Maintenance Requirements Review Group

The ability to carry out maintenance tasks will be a vulnerable area. At the nuclear power stations, to support maintenance related operational decision making a Maintenance Requirements Review Group [MRRG] will be formed (Appendix D) to address maintenance and related priority issues. For further guidance on the formation of the MRRG see Appendix K.

4.4 Impact Mitigation Countermeasures

The demands and uncertainties associated with a pandemic require flexibility based on a combination of strategies to develop an effective and sustainable response. Options that will be considered to counter/mitigate the impact of a pandemic include, but may not be limited to, the following:

- Introduction of enhanced hygiene regimes

- Implementation of travel restrictions
- Restrictions on internal gatherings
- Implementation of social distancing
- Isolation/voluntary quarantining of essential staff
- Introduction of revised working patterns (inc shift patterns and home working)
- Suspension of non-essential maintenance
- Delaying/suspending planned outages
- Reactor shutdown at the nuclear power stations.

4.5 Changes To Normal Safety Management Arrangements

The revised Company arrangements for managing safety during a pandemic allow the company to continue to meet the fundamental requirements of nuclear safety whilst enabling a more flexible approach in response to the national need. Whilst Generation shall endeavour to maintain full compliance with all legal and regulatory requirements and will manage risk as low as reasonably practicable, it may be appropriate to raise the priority of continued generation over the priority of Compliance with existing arrangements in support of the national need. If necessary in extreme circumstances discussions with regulators and Government may be held to consider what actions could be taken within the context of the then existent law and regulation to enable continued operation. Any such proposals will be supported with the relevant documentation and analysis.

Therefore, it is possible, given the unique nature of the challenges that may be presented by a pandemic and its likely duration, that some changes to normal safety management arrangements may be necessary in order to limit the spread of infection, allow the diversion of resources to support essential activity and continue to ensure the safe operation of the fleet.

Changes will only be implemented if staffing levels dictate that they are required. They will not be introduced universally; rather they will be introduced as resource levels dictate at each site, and it is the relevant Plant Manager/General Manager/Station Director (Advised by the Site Pandemic Response Team Lead) who will determine when staffing levels require the implementation of the changed arrangements defined in this plan. For sites within the nuclear fleet, it is only the Agent Licensee who can declare a Site Pandemic. Similarly, they will only remain in place until staffing levels are sufficient for normal practices to be resumed, and some practises will return to normal before others. Throughout any period when the changes proposed are implemented, safety will remain the priority at all times.

At the nuclear power stations at no stage do the arrangements outlined in this plan remove the Shift Managers' responsibility to take whatever actions are required to maintain nuclear safety. The Shift Managers shall not be put in a position where they must consult before taking action.

4.6 Decision Making

Before changed safety management arrangements are implemented these shall be subject to the Company Operational Decision Making (ODM) process and documented in ODM Activity Logs (ODMALs) in accordance with reference 2 at nuclear power stations or the local arrangements at all other locations. For guidance on the role of the ODM see Appendix K.

Through this process the Site and Generation Pandemic Response Teams will consider, sentence and record decisions.

4.7 Maintenance Arrangements

The work management process is used to control implementation of the sites predefined maintenance programme. The process is capable of allowing a systematic assessment to be made to match essential maintenance requirements with available resources.

Plant inspections, checks and maintenance have to be undertaken to ensure the ongoing ability to operate safely and supply power or gas to the Grid system. These tasks include:

- Commercial functions to protect generation/site operation.
- Environmental functions to protect the environment.
- Nuclear Safety functions to meet the requirements of nuclear safety cases.
- Conventional Safety functions to protect staff and plant at non-nuclear sites.

If staff resources are severely depleted it will not be possible to service all of the routine activities and work will need to be prioritised. Under these circumstances, it will be the responsibility of the MRRG to suspend or postpone tasks according to the available resources and the significance of the task for nuclear safety and continued generation. The MRRG shall be activated by applying a Category 3 'Trigger' EC submission, as shown in the maintenance deferral process map in Figure 2. This EC will cover activities with an interval frequency of three months or shorter and can only be deferred for a maximum of six months past its initial due date. The MRRG is not authorised to defer statutory routines e.g. routines in support of PSSR (see Section 4.9).

Any activities that are considered to be Category 1 can only be deferred through a Category 1 submission on a case by case basis. Guidance on identifying Category 1 activities is given in Appendix K.

At non-nuclear sites the requirement to complete tasks with an interval of three months or shorter shall be documented and, where deemed necessary, subject to local change procedures.

Note: Intentional entry into these arrangements by sending home healthy workers is not permitted.

4.7.1 Nuclear Power Stations – LC 28 Compliance

Whilst best endeavours will be used to carry out all Licence Condition (LC) 28 related routines, it is recognised that an LC28 related maintenance routine may be deemed a lower priority than a routine not required by LC28 e.g. clearing the CW drum screens of debris [as this would support continued operation of the station].

Post pandemic, the key requirement is to have a clear workdown curve to bring each station back into line with its LC28 routines. It is accepted that this may take a notional three month period and progress must be visible to the Station, the Incident Management Team, Independent Nuclear Assurance, the Nuclear Safety Committee and the Regulator(s).

For Maintenance Schedule tasks with an interval of longer than three months which happen to fall due during a pandemic, where the existing contingency does not provide sufficient flexibility then the existing extension to interval process will be applied on a case by case basis.

Should the work management system be lost for any reason then the existing system recovery arrangements will be used. During a pandemic, if work has been completed but the work management system not updated, then this will not be considered a breach of the Maintenance Schedule.

Note: The definition of a 'month' for Sizewell B is 31 days and for all AGR stations it is five weeks.

4.8 Nuclear Outage Arrangements

If staff resources are severely depleted and the national need for electricity generation warrants, LC 30 outages may be postponed up until other statutory or safety case limits are reached.

Should it be necessary to defer an LC30 outage beyond a statutory or safety case limit, this would be subject to an appropriately categorised Submission.

For stations requiring other outages (Including off-load refuelling), these would be undertaken incorporating the minimum amount of plant interference to return the reactors to service.

4.9 Other Statutory Requirements

Whilst best endeavours will also be used to complete all work, if staff resources are severely depleted it may be necessary to defer some activity. Before deferring any statutory (non Licence Condition at nuclear power stations) activity this shall be subject to the ODM/ODMAL process e.g. Pressure Safety Systems Regulations required work.

4.10 Essential Staffing Arrangements

In support of the 4.10.1 and 4.10.2 below, temporary changes to working practices, more flexible working arrangements (including changes to shift patterns) and training may be required to cover staff absences. Where SQEP status is date limited, and expires during the pandemic and refresher training cannot be provided because of staff shortages, qualification can be extended by a period of up to six months. A member of staff, who has completed a normal work shift and then remains on site resting will, if necessary, be included in the count of staff available. Similarly a person who has been called to site and is resting in advance of starting a normal work shift will, if necessary, also be included in the count of staff available. Sites, following local consultation, will adopt the most appropriate shift patterns for the site.

4.10.1 Nuclear Sites

Staffing shall be maintained at a level consistent with the ability to safely shut down and post trip cool operating reactors within the established safety envelope (all relevant Technical Specifications) even if subjected to any credible fault including full-load rejection from Grid of both units (on the assumption that reactor(s) are in service before the event).

Each power station shall review minimum manning arrangements required for safe operation during a pandemic. By using the ODM/ODMAL process, the Station Director and Shift Manager, as a Duly Authorised Person, will carry out risk assessments to confirm there is sufficient manning on site and support available from central functions, to allow continued safe operation. Stations shall also ensure there is sufficient line management cover to maintain management resilience.

The preservation of Licence Condition 11 emergency manning levels shall also continue to be a priority at each station. If a shortfall in emergency scheme manning levels arises, or is expected to arise, then the course of action shall be subject to the ODM/ODMAL process and determined by the Station Director

The reactors shall at all times remain under the control of a Duly Authorised Person.

It shall always be clear who is carrying out the role of Agent of the Licensee.

Where the number of suitably qualified and experienced persons (SQEP) falls below, or is predicted to fall below, that needed to ensure nuclear safety, action shall be taken to shutdown the reactors at the affected location.

4.10.2 Non-Nuclear Sites

Staffing shall be maintained at a level consistent with the ability to safely operate the site within the established safety envelope even if subjected to any credible fault. Each site shall review minimum manning arrangements required for safe operation during a pandemic. The Plant manager/General Manager and Operations Manager will carry out risk assessments to confirm there is sufficient manning on site and support available from central functions, to allow continued safe operation. Sites shall also ensure there is sufficient line management cover to maintain management resilience.

4.11 Essential Supplies And Stocks

Safety cases require a minimum availability of critical supplies. If any stock levels, other than those specified in the Technical Specifications, are challenged then the risk associated with operating outside of these limits will be assessed to ensure the overall risk is as low as reasonably practicable.

4.12 Oversight Arrangements

As a pandemic situation develops, enhanced oversight arrangements will be put in place to monitor decision making and safe operations, including independent oversight. In Phase D, INA shall be invited to all MRRG and ODM* meetings, and a record kept (using the appropriate forms for the meeting) of INA input. The invitation shall initially go to the local site INA. INA will consider attendance on a risk-based approach. If local INA is impacted by the pandemic and is not in a position to consider attendance, this shall be elevated to the INA Manager.

All sites are represented on the Generation Pandemic Response Team hence there is also the ability for cross station challenge. It is the expectation that INA input will be sought (at all Stations) to support sharing of experiences via this platform.

*Maintenance Requirements Review Group, MRRG, in line with Appendix D and BEG/SPEC/OPS/WM/999. Operational Decision Making, ODM, in line with BEG/SPEC/OPSV/CAP/016. Note that section 3.7 already specifies INA oversight of ODMs.

4.13 Return To Normal Operation

Once the pandemic has been brought under control, staffing levels are sufficient to enable normal organisational arrangements and plans to transition back to normal arrangements are complete. The Managing Director will formally stand down the pandemic response organisation. Further guidance can be found in Appendices E and G.

5. Definitions

BEIS	Department for Business, Energy and Industrial Strategy
PWG	Pandemic Working Group
EDF(E)	EDF Energy PLC
LC	(Nuclear Site) Licence Condition
MRRG	Maintenance Requirement Review Group
MS	Maintenance Schedule
NG	EDF Energy Nuclear Generation Ltd
ODM	Operational Decision Making
ODMALs	Operational Decision Making Activity Logs
ONR	Office for Nuclear Regulation (formerly NII)
SQEP	Suitably Qualified and Experienced Person
WHO	World Health Organisation

6. References

1.	NP/SC 7573 Issue 01	Principles for Safe Operation in the Event of a Flu Pandemic
2.	BEG/SPEC/OPSV/CAP/007	Operational Decision Making
3.	N/A see Engineering Change	Model Cat. 3 Extension to Maintenance Schedule Intervals (AGR and PWR)
4.	BEG/SPEC/OPSV/EPG/084	Hologram ID cards for emergency response team members/emergency scheme role holders
5.	BEG/SPEC/OPS/WM/999	Support to the Maintenance Requirements Review Group during a pandemic
6.	BEG/FORM/OPS/WM/999	Maintenance Assessment Form Flu Pandemic
7.	GEN/SPEC/EPG/001	Incident Management Plan
8.	BEG/ICP/DM/006	Records Management
9.	E/REP/BADB/0019/GEN/05	Aspects of Categorisation of proposals submitted under the Modification Process (BEG/ICP/SHE/EC/001)

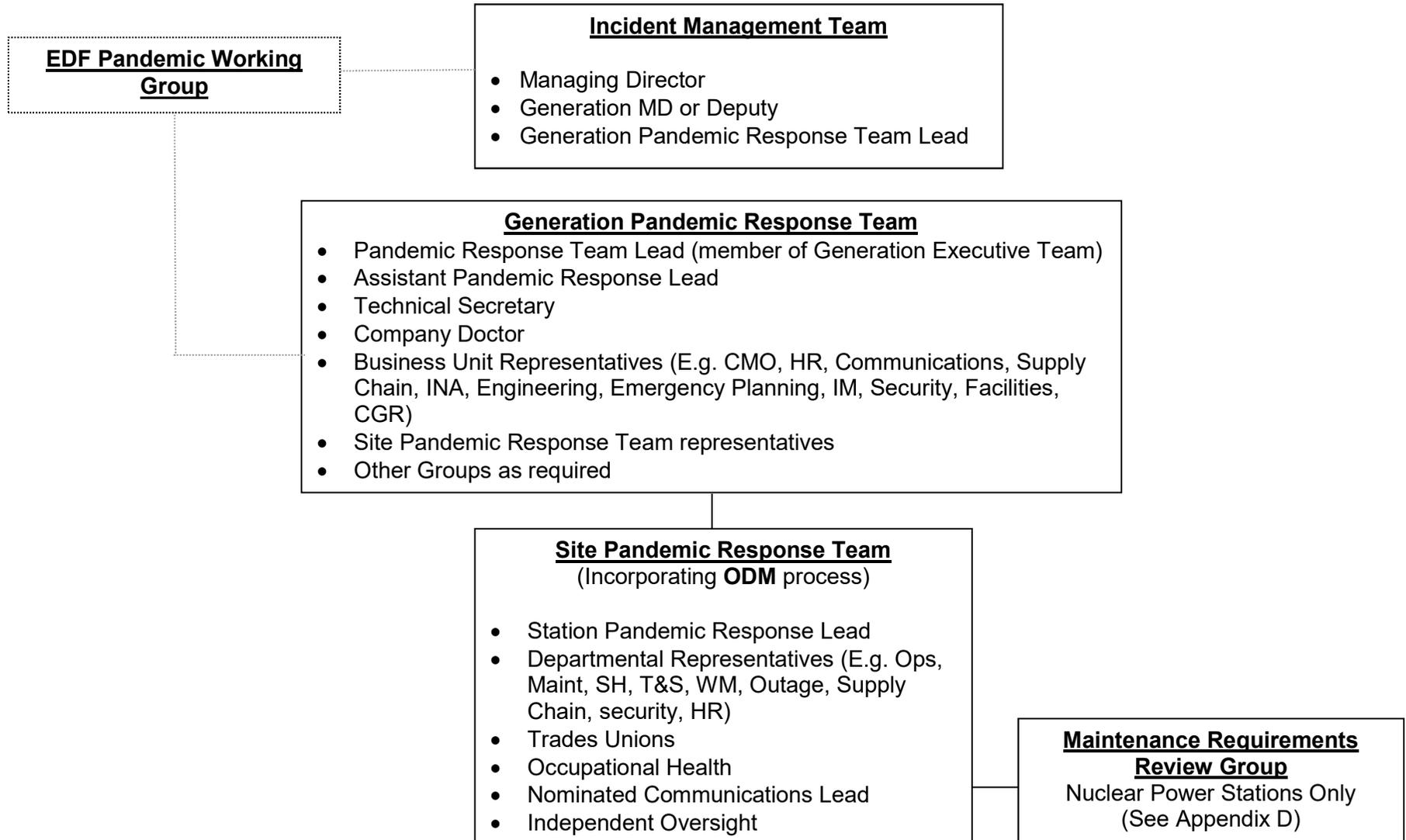
7. Records

No.	Record Title	Template No./Identifier	Record No./Identifier or Link to Record	Requirement for Record	Record Originator	Record Owner	Retention Period	Storage Location	Security Classification
01	Central Pandemic Response Team Checklist (Completed)	Appendix F of this document	N/A	BEG/SPEC/OPSV/EPG/085 May be completed to assist the GPRT in decision making during the response – not formally required	Generation Pandemic Response Team	Emergency Planning Group	Non – permanent – retain until post incident reviews are complete.	V:\Emergency Planning Group\08 Real Events Failure of Arrangements\8-3 Genuine Incidents	Not protectively marked
02	Station Pandemic Response Team Checklist (Completed)	Appendix G of this document	N/A	BEG/SPEC/OPSV/EPG/085 May be completed to assist the SPRT in decision making during the response – not formally required	Station Pandemic Response Team	Site EPE (or Business Continuity Lead)	Non – permanent – retain until post incident reviews are complete.	V:\Emergency Planning Group\08 Real Events Failure of Arrangements\8-3 Genuine Incidents	Not protectively marked
03	Pandemic Diaries (Completed)	Appendix H of this document	NA	BEG/SPEC/OPSV/EPG/085 May be completed to assist the SPRT in decision making during the response – not formally required	Station Pandemic Response Team	Site EPE (or Business Continuity Lead)	Non – permanent – retain until post incident reviews are complete.	V:\Emergency Planning Group\08 Real Events Failure of Arrangements\8-3 Genuine Incidents	Not protectively marked

04	Maintenance Assessment Form - Flu Pandemic	BEG/FORM/OPS/WM/999	AMS Work Order Card Number	Work Management in accordance with LC28	Site Maintenance Requirements Review Group	Work Management.	Until AMS update completed	Work Management Department	Not protectively marked
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Records associated with this SPEC shall be controlled, stored and archived in accordance with the requirements of [BEG/ICP/DM/006](#).

Figure 1 Recommended Pandemic Response Organisation



Appendix A UK Pandemic Response Phases

The UK approach uses a series of phases: detection, assessment, treatment, escalation and recovery (DATER). It also incorporates indicators for moving from one phase to another.

The phases are not numbered as they are not linear, may not follow in strict order, and it is possible to move back and forth or jump phases. There will also be variation in the status of different parts of the country reflecting local attack rates, circumstances and resources.

Detection – Triggered on the basis of reliable intelligence or if a pandemic related “Public Health Emergency of International Concern” (PHEIC) is declared by the WHO or by the WHO declaring a Pandemic Alert Phase1, the focus in this stage would be:

- intelligence gathering from countries already affected
- enhanced surveillance within the UK
- the development of diagnostics specific to the new virus
- information, specific advice, and communications to the public and professional

The indicator for moving to the next stage would be the identification of the novel virus in patients in the UK

Assessment – The focus in this stage would be:

- the collection and analysis of detailed clinical and epidemiological information on early cases on which to base early estimates of impact and severity in the UK (First Few Hundred (FF100))
- reducing the risk of transmission and infection with the virus within the local community by:
 - actively finding cases
 - advising community voluntary self-isolation of cases and suspected cases
 - advising on the treatment of cases/suspected cases and use of antiviral prophylaxis for close/vulnerable contacts, based on a risk assessment of the possible impact of the disease

The indicator for moving from this stage would be evidence of sustained community transmission of the virus, i.e. cases not linked to any known or previously identified cases.

Treatment – The focus in this phase would be:

- advising on the treatment of individual cases and population treatment.
- to consider enhancing public health measures to disrupt local transmission of the virus as appropriate, such as localised school closures based on public health risk assessment

Depending upon the development of the pandemic, to prepare for targeted vaccinations with NHS as the vaccine becomes available (NB the vaccine will not be available for 5-6 months after the decision to order vaccine is given).

Arrangements will be activated to ensure that necessary detailed surveillance activity continues in relation to samples of community cases, hospitalised cases and deaths. When demands for services start to exceed the available capacity, additional measures will need to be taken. This decision may be made at a regional or local level as not all parts of the UK will be affected at the same time or to the same degree of intensity.

Escalation – The focus in this phase would be:

- escalation of surge management arrangements PHE to advise NHS
- prioritisation and triage of service delivery with aim to maintain essential services
- resilience measures, encompassing robust contingency plans

-
- consideration of de-escalation of PHE response if the situation is judged to have improved sufficiently

These two phases – treatment and escalation – form the treatment component of the pandemic. While escalation measures may not be needed in mild pandemics, it would be prudent to prepare for the implementation of the escalation phase at an early stage, if not before.

Recovery – The focus in this phase would be:

- normalisation of services, perhaps to a new definition of what constitutes normal service
- restoration of business as usual services, including an element of catching-up with activity that may have been scaled-down as part of the pandemic response eg reschedule routine operations
- post-incident review of response, and sharing information on what went well, what could be improved, and lessons learnt
- taking steps to address staff exhaustion
- planning and preparation for resurgence of the pandemic, including activities carried out in the detection phase
- continuing to consider targeted vaccination with the NHS, when available
- preparing for post-pandemic seasonal influenza

The indicator for this phase would be when the pandemic activity is either significantly reduced compared to the peak or when the activity is considered to be within acceptable parameters. An overview of how service capacities are able to meet demand will also inform this decision

Appendix B Principles For Nuclear Site Licence Condition Compliance During A Pandemic Situation

Compliance with the Nuclear Site Licence Conditions will be affected, to varying degrees, by a pandemic (See reference 1 section 5.4 for further details). Those Licence Conditions likely to be most significantly affected and the associated changed arrangements are summarised below.

Note: The Phase D arrangements will only be implemented if resource shortfalls require such action.

LC 10 – Training

PHASES A TO C: Training activities shall be prioritised to support operations, maintenance and emergency scheme manning levels.

PHASE D: Current DAPs and SQEPs will continue to be regarded as such even if their formal re-qualification is up to six months out of date.

LC 11 – Emergency Arrangements

PHASES A TO C: Compliance with the emergency scheme manning requirements will be maintained.

PHASE D: If an unavoidable shortfall in emergency scheme manning level arises, or is expected to arise, then the course of action shall be determined by the ODM/ODMAL process.

NOTE: The Shift Manager shall retain responsibility to take whatever actions are required to maintain nuclear safety.

LC 12 – Duty Authorised and other Suitably Qualified and Experienced Persons

PHASES A TO C: The minimum requirements for DAPs and SQEPs shall be maintained.

PHASE D: Where DAP or SQEP Certification is time limited then dates shall be extended by six months.

LC 17 – Management Systems

PHASES A TO C: Planned quality assurance activities shall carry on as normal

PHASE D: If the work management system (WMS) is not updated to record work completed (either due to system or resource availability issues) then a paper record shall be kept so that the WMS can be updated at a later date.

PHASE D: Paper records shall be retained in hard copy if IT systems are unavailable or cannot be supported. These will also be used to assist the recovery phase.

LC 22 – Modification or Experiment on Existing Plant

PHASES A TO C: Planned modification work shall carry on as normal.

PHASE D: Modification workload shall be matched to available resource with the priority given to modifications deemed essential for nuclear safety or continued generation.

LC 23 – Operating Rules

PHASES A TO C: Current operational limits and conditions shall be met to secure compliance with the safety case.

PHASE D: No change.

LC 24 – Operating Instructions

PHASES A TO C: Current operational limits, conditions and instructions shall be met to secure compliance with the safety case.

PHASE D: No change.

LC 26 – Control and Supervision of Operations

PHASES A TO C: Planned operational work shall carry on as normal.

PHASE D: “Operations” (as defined in the Licence) workload shall be matched to available supervisory resource with the priority given to operations deemed essential for nuclear safety or continued generation.

LC 28 – Examination, Inspection, Maintenance and Testing

PHASES A TO C: Planned maintenance work shall carry on as normal.

PHASE D: Maintenance workload shall be matched to available resource with the priority given to maintenance deemed essential for nuclear safety or continued generation.

PHASE D: Novel work and experiment should not be performed unless deemed essential. If the Station Director declare a Station Pandemic Situation (Appendix J) the MRRG can suspend or postpone tasks according to the available resources and the significance of the task for nuclear safety and continued generation.

NOTE: It is recognised that an LC28 Maintenance Routine may be deemed a lower priority than a routine not required by LC28 e.g. clearing a Cooling Water drumscreen of debris (as this would support continued generation).

LC 30 Periodic Shutdown

PHASES A TO C: Planned outages shall carry on as normal accepting they may take longer especially if reliant on external contractors for in line activities.

PHASE D: A LC30 outage may be postponed up until other statutory or safety case limits are reached.

Note: Reference 1 did not propose extending any safety case related limits that determine the timing of outages and therefore should such a situation arise it shall be subject to normal licence compliance arrangements.

Licence Conditions – Other

Note that those Licence Conditions not covered above are generally deemed to be of less significance in terms of the potential impact of a pandemic. However, for all Licence Conditions that are not specifically included, compliance with existing arrangements will be maintained.

LC32: Accumulation of Radioactive Waste

PHASE A TO C: No change.

PHASE D: If staff shortage lead to the accumulation of radioactive waste. Designation of temporary storage locations would take place according to the process outlined in BEG/SPEC/SHE/ENVI/042/04.

Appendix C Planning Assumptions

DIMENSIONS

The threat of a contagious disease pandemic is different from most other threats for the following reasons:

- **Worldwide Impact.** Unlike many threats that are localised, this has the potential to impact operations simultaneously across Europe and around the world.
- **Duration.** A pandemic has the potential to severely disrupt operations for six to eight weeks. Some level of fear would spread through the population prior to the actual outbreak and the actual “sickness” period would be for up to two weeks or more if complications occur for many individuals. This would then be multiplied as the pandemic worked its way through the population. The virus could mutate leading to multiple cycles or waves of illness.
- **Mortality.** The predicted rates vary significantly from ½% to 2%. Even a low end mortality rate would cause severe disruption for employees who lose family members and friends. Pandemic mortality rates are usually much higher in young children, the elderly, and individuals weakened by other illnesses. However the variability of pandemic mortality is difficult to predict. During the 1918 pandemic, mortality rates were highest among young adults.

ASSUMPTIONS

- The timing of the outbreak of a pandemic remains uncertain.
- Once human to human transmission of a pandemic virus begins, the disease could spread worldwide within three to eight weeks.
- Infection rates could exceed 25% in an affected population and infected employees may be very ill for up to two weeks or more if complications occur. Time periods away from work will depend on family situation and recovery.
- The typical incubation period (interval between infections and onset of symptoms) for a pandemic virus is approximately two days. This could vary based on a number of factors.
- Absenteeism rates for employees could approach 40% over a six to eight week period.
- Persons who contract the disease are not expected to contract it a second time due to the development of immunity. However, if the virus mutates substantially, there may be recurrences in individuals who were previously ill. These persons would be expected to be available during subsequent waves of the pandemic. However, if others in their families are ill in these later waves these persons may need to care for family members.
- Personnel and business processes will need to be managed differently to maintain essential business functions and to minimise the spread of the disease.
- Not enough vaccines will be available for the entire population. There may be no vaccine in the early stages and then limited quantities for select population subsets.
- Antiviral medicines will be available in very limited quantities and will likely be allotted by government agencies to the very ill.
- There may be multiple waves (maybe three) of the pandemic, each lasting six to eight weeks. There may be three to five months between waves.
- Accurate and timely communication to employees will be imperative
- National Grid will maintain grid stability. Rolling blackouts will be used if load exceeds generation.

Appendix D Maintenance Requirements Review Group (MRRG)

This Appendix covers the establishment of station Maintenance Requirements Review Groups [MRRG] and how plant maintenance will be undertaken at BEG Stations should a pandemic be declared and resources are depleted. In this Appendix factors influencing the decisions of the MRRG are discussed. The Terms of Reference for the MRRG are also presented. Instructions covering Work Management Department support to the MRRG are contained in reference 5.

It is important to note that here the maintenance is used to refer to any activity that is identified on the MS and EMS and requires to be undertaken at defined intervals.

The work management system (WMS) will be used to generate a three month look ahead MS, EMS and statutory routine schedule compliance report and will be used to determine identified maintenance requirements. Each activity will be considered taking into consideration the following factors and any others that are specific to an activity.

- i) Each routine activity has its own particular staff expertise requirements and decisions will depend on the staff availability on the day.
- ii) Where the MRRG is of the view that an activity can be deferred then a time for a further review shall be identified and the activity brought forward for further consideration at an identified date.
- iii) When considering proposals to defer a maintenance interval due regard shall be made to the required function, expected demand, operating history and any operational changes brought about by the pandemic itself (see Appendix K for further guidance).
- iv) Before suspending a maintenance activity, consideration shall be given to the impact on time limited safety cases or justification for continued operations (JCO) requirements.
- v) When deciding to delay an activity, recommendations shall be made as to how the normal maintenance requirements can be recovered.
- vi) For each activity a maintenance assessment form (Ref.6) shall be completed.
- vii) A copy of the maintenance assessment form shall be sent to the Work Management Department to allow WMS records to be maintained. Should the WMS not be available then manual records shall be compiled until such time as the WMS can be accessed.

A copy of the three month look ahead will be sent to Design Authority and site Nuclear Safety Group and their input and advice sought.

The MRRG shall also consider the need to undertake refuelling activities and ensure that as far as reasonable practicable the requirements of the relevant Technical Specification are met. Where resources are such that refuelling cannot be carried out then the review form should be completed. Whenever resources become available replacement of fuel approaching its Technical Specification limits e.g. irradiation will be regarded as a priority.

TERMS OF REFERENCE

The Maintenance Requirements Review Group [MRRG] shall comprise a Chairman (Generally the Maintenance Manager) and a Vice Chairman [appointed by the ODM] and at least two other members (e.g. Work Management and Nuclear Safety Group representatives).

Membership of the MRRG can be varied to suit expertise requirements of the activities being considered.

To be quorate, the Chairman [or the Vice Chairman] and two members must be involved in discussions which may be teleconference or via the internet.

The MRRG shall consider those maintenance activities falling due during a pandemic and where resources are depleted.

The MRRG shall consider the advisability of deferring, postponing or cancelling an activity. Their considerations will include the possible consequences of their decisions.

The MRRG shall consider the operational demands and operational experience in reaching decisions.

The MRRG shall seek Design Authority and site Nuclear Safety Group advice and input.

In reaching their decisions the MRRG shall take what advice they deem appropriate. This advice can be sought by telephone or email. If by telephone then written confirmation is required [email will be acceptable].

In conjunction with reaching a decision to postpone, defer or cancel an activity then a recovery strategy shall be identified which will permit a full return to normal maintenance activities.

For each activity considered the MRRG shall complete a maintenance assessment form (Ref. 6) that shall be sent to the Work Management Department to allow records to be maintained.

The ODM may also refer other matters to the MRRG that they consider appropriate.

Appendix E Nuclear Power Station Licensee Incident Management Team Trigger Points

Examples of trigger points that would activate the Incident Management Team are as shown below.

A rising trend in pandemic related absence which, if it were to continue, would have a high potential to endanger safety or to significantly impact business performance or reputation within 2 weeks
Actual disruption to operational performance which has a high potential to challenge safety or significantly impact business performance or reputation
An operational requirement to stop all non-essential work
An operational requirement to seek force majeure relief from UK Government
A deterioration in industrial relations which, if it were to continue, would have a high potential to challenge safety or to significantly impact business performance or reputation within 2 weeks
A pandemic related employee fatality
A significant increase in severity of virus symptoms in the UK (e.g. a higher hospitalisation or fatality rate than seasonal flu), including rising levels of consumer and media anxiety.
A request from a UK Government department requiring an Executive level response
A request from the Central Pandemic Response Team for an executive level decision

Appendix F Generation Pandemic Response Team Lead Checklist

As it is not possible to predict with certainty the impact of a pandemic or its likely duration, the response must be both forward thinking and sufficiently flexible to respond to unexpected challenges.

Consequently, this checklist is to be regarded as guidance. Specific activities should be brought forward, deferred and supplemented as the situation dictates.

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE A	DEFINITION: Initial monitoring and mobilisation of the response organisation. The phase when the business becomes aware of the potential for a pandemic in the UK. During this phase the primary function of the response organisation will be to monitor the external environment, confirm lines of communications and ensure all business units are prepared for escalation should it be necessary. Business operations will be maintained as normal.		
	Organisation, Interfaces and Communications		
	Appoint Team Lead.		
	Establish organisation in figure 1. Clearly identifying members and responsibilities.		
	Gather information on the nature of the event and assess potential risk to the safe and continued operation.		
	Confirm and communicate the working arrangements for the Pandemic Response Team (Location, meeting frequency, membership etc).		
	Establish contact with EDF Pandemic Working Group and reporting pattern		
	Confirm Site Pandemic Response Teams are established		
	Identify Pandemic Leads Barnwood and East Kilbride, and determine the arrangements for other locations where Generation has a presence		
	Brief Management and other key staff (Shift Manager, first aiders, emergency responders)		
	Notify all staff of the activation of the pandemic response plan		
	Agree lead for stakeholder liaison for the following with the Pandemic Working Group <ul style="list-style-type: none"> ▪ Key Regulators ▪ Responsible Government department ▪ Site Local Resilience Forums ▪ Other nuclear operators (For alignment and mutual assistance) ▪ Trades Unions 		
	Support initiation of communications plan as developed by the Pandemic Working Group		
	People		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Issue guidance to sites/CSF on what advice to issue and what action to take if any member of staff/contractor exhibits viral like symptoms or a member of staff/contractor is identified as having recently returned from a Country/Region affected by the virus.		
	Sites and Plant		
	As information on the pandemic emerges assess the potential impact of a pandemic on nuclear safety and the continued operation of the nuclear fleet and Offices. Look ahead at programmes of work and identify specific vulnerabilities and key hold/decision points for the cancellation /postponement of activities.		
	Suppliers and Supplies		
	Make contact with suppliers and essential contract partners to notify them of the plan activation and check effectiveness of their contingency arrangements		
	Other		
	Refresh awareness of the pandemic response plan		
	Advise Managing Director on the need to transition phases.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE B	DEFINITION: Heightened monitoring and full mobilisation of the response organisation. During this phase the response organisation will put itself onto a more formal footing. The external environment will be monitored closely, internal and external lines of communication will be formalised, precautionary and educational/awareness raising actions will be initiated. Business operations will be maintained as normal.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale to the business unit		
	Co-opt additional resource/expertise onto Pandemic Response Team membership onto as necessary		
	Commence a log.		
	Establish routine monitoring of UK situation and provide regularly briefs to sites		
	Establish regular communications with agreed key stakeholders.		
	Review communications plan with Pandemic Working Group		
	People		
	Introduce enhanced cleaning regimes at all locations		
	Update advice to Sites and CSF regarding staff travel to Countries / Region affected by the virus.		

PHASE	ACTIVITY	☐	NOTES
	<p>Prepare and issue appropriate guidance, developed by the Pandemic Working Group, for activation during phase C&D including advice on:</p> <ul style="list-style-type: none"> ▪ Personal hygiene/social distancing ▪ Advice to staff who feel/become unwell ▪ Advice to staff on absence relating to caring for dependents ▪ Travel restrictions. ▪ Restriction on visitors ▪ Stopping non work (inc meetings, training and other gatherings) ▪ Working from home ▪ Changes in working patterns (inc shift working) ▪ Essential staffing ▪ Monitoring for signs of stress 		
	Determine the availability and Government policy on use of vaccinations/anti-virals and if they are available communicate the arrangements and timing for their administration.		
	Direct Sites and CSF business units to ensure all personnel contact details are accurate in MyHR (Address, telephone numbers and next of kin)		
	Direct Sites and CSF business units to review / update list of essential staff needed to support safe and continued operation:		
	Direct Sites and CSF business units to review / update list of priority staff who may be required to work from home and ensure they have the hardware and permissions necessary		
	Sites and Plant		
	Reinforce the need to use the Operational Decision Making (ODM) process when considering significant decisions and document decisions accordingly		
	Provide nuclear stations (AGR & PWR) with model category 3 modifications for the extension to Maintenance Schedule intervals (Ref. 3) and definitive list of high priority systems for maintenance.		
	Suppliers and supplies		
	Continue dialogue with essential suppliers and contractors. Identify any significant risks and action suitable mitigation activity.		
	Other		
	Seek confirmation from sites and CSFs that phase B activities have been completed		
	Advise Managing Director on the need to transition phases.		

PHASE	ACTIVITY	☐	NOTES
PHASE C	DEFINITION: Generation will move into this phase if the pandemic has or has a high potential to have an impact upon normal business (i.e. reporting of pandemic cases in the local community and/or first reported case of the pandemic inside NG). During this phase the response organisation will initiate a series of predetermined actions to minimise the potential impact of pandemic upon safe and continued operation. This phase may include a phased reduction in non-essential business operations in order to preserve and protect key personnel roles and functions.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale		
	Pandemic Response Team to meet on a daily basis including weekends and bank holidays. Meetings to include Sites, Barnwood and East Kilbride leads.		
	Formalise the process for recording actions, issues and decisions (including ODMALs) using the pandemic diary proforma (see appendix H)		
	Monitor the internal and external environment closely using the information to inform decisions and action		
	Determine arrangements for enhanced oversight of plan implementation and decision making.		
	Provide routine updates to Incident Management Team		
	Increase internal communications across NG, including regular calldowns with EDF, Sites and CSF contacts. Key messages likely to be: reassurance , reinforcing good hygiene and staying at home if unwell		
	Provide regular briefs to key stakeholders, to an agreed frequency, on the number affected personnel and the actual/predicted impact on safety and continued operations.		
	People		
	Collate absenteeism rate across Generation on a daily basis (Breakdown by 'reason for absence' and location) and use information to inform decision making		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Update and advise Sites/CSFs on appropriate implementation of: <ul style="list-style-type: none"> ▪ Personal hygiene/social distancing ▪ Advice to staff who feel/become unwell ▪ Advice to staff on absence relating to caring for dependents ▪ Travel restrictions. ▪ Restriction on visitors ▪ Stopping non work (inc meetings, training and other gatherings) ▪ Working from home ▪ Changes in working patterns (inc shift working) ▪ Essential staffing ▪ Monitoring for signs of stress 		
	Sites and Plant		
	Assess actual and potential risk to nuclear safety and continued operations at affected locations.		
	Ensure Sites are made aware of work (particularly in CES) identified as will be delayed/stopped.		
	Mobilise support to affected location in risk mitigation activities		
	Suppliers and supplies		
	Confirm progress with contract partners pandemic plans, identifying specific vulnerabilities (e.g. Risk to delivery of bulk chemicals, new fuel or risk to irradiated fuel transport/receipt)		
	Other		
	Seek confirmation from Sites and CSFs that phase C activities have been completed		
	Advise Managing Director on the need to transition phases.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE D	DEFINITION: Generation will move into this phase if the pandemic has or has the potential to have a significant impact upon business continuity including security of supply (i.e. widespread cases of the pandemic in the UK and/or inside NG). During this phase the organisation will initiate further actions to minimise the impact of pandemic upon safe and continued operation. The organisation will focus on essential operations to ensure nuclear safety.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Continue to monitor the external environment (medical, political, electricity supply need, security, vehicle fuel availability, communications infrastructure etc) providing advice and guidance to Sites and CSFs on the likely course of the pandemic and other external factors		
	Activate changed regulatory compliance arrangements in consultation with regulators (where available). Implement enhanced internal oversight of decision making. See Ref.1.		
	Brief the Incident Management Team as required		
	Review focus of communication plan with Pandemic Working Group. Key messages likely to be: necessity to focus on Safety first, essential work, arrangements for staffing etc		
	Provide information to stakeholders on the impact and predicted impact on safe and continued operation.		
	Ensure National Grid are kept informed about any risk to continued operations		
	Seek Government assistance in the resolution of supply and difficulties should they arise		
	Brief company insurers (where available) on implementation of changed arrangements and if there is any change in company risk profile		
	People		
	Collate absenteeism rate across Generation on a daily/shift basis (Breakdown by 'reason for absence' and location) and use information to inform decision making		
	Update and advise Sites/CSFs on appropriate implementation of: <ul style="list-style-type: none"> ▪ Personal hygiene/social distancing ▪ Action to be taken if staff feel/become unwell ▪ Advice to staff on absence relating to caring for dependents ▪ Travel restrictions. ▪ Restriction on visitors ▪ Stopping non essential work (inc meetings, training, appraisals and other gatherings) ▪ Working from home ▪ Changes in working patterns (inc shift working) ▪ Essential staffing (inc Need to complete Appendix H) ▪ Monitoring for signs of stress 		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Implement heightened oversight arrangements for the monitoring of stress in key staff (This should specifically focus on staff who are 'upgrading').		
	Monitor and confirm [to Sites] on a daily basis that sufficient staff remain available to maintain the Central Emergency Support Centre (CESC) standby duty rota and Barnwood Alert Centre (BAC) staffing.		
	Sites and Plant		
	Determine the impact and trend of the pandemic on each locations and maintain an overview of the collective impact on safe and continued operation.		
	Continue to provide support to Sites/CSFs in implementing actions		
	Suppliers and supplies		
	Monitor the provision of essential supplies of consumables across the fleet. Where necessary coordinate management of the fleet stock/supply position.		
	Other		
	Seek confirmation from Sites and CSFs that phase D activities have been completed		
	Advise Managing Director on the need to transition phases.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE E	DEFINITION: Generation will move into this 'recovery' phase once the outbreak has been declared over and sufficient staff have returned to work to enable normal working arrangement to be restored. During this phase the response organisation will ensure a phase and controlled transition back to normal business operations.		
	Confirm that the pandemic has ended or has subsided sufficiently to enable normal arrangements to be reinstated. Agree change with Pandemic Working Group. Communicate phase change and rationale.		
	Confirm sufficient staff have returned to work to enable return to normal operations		
	Review all decisions (ODMALS) taken during the event and determine appropriate back out criteria		
	Develop a recovery plan to return to normal operations including a review of all cancelled/suspended work.		
	Develop support to enable all staff affected by the pandemic to return to normal.		

PHASE	ACTIVITY	☐	NOTES
	Conduct a post-pandemic review. Capture lessons learned and incorporate these into a revision of the pandemic plan and provide a report to the NSC on the nuclear generation response within 3 months. Note: Any required change in the arrangements beyond those agreed in reference 1 must be subject to a separate paper to the NSC.		
	Upon completion of the recovery plans advise the Managing Director on the need to stand down the pandemic response organisation and exit the pandemic plan.		
	Communicate the stand-down of the pandemic response plan and return to normal operation to all internal and external stakeholders e.g. Regulators, Government and NSC.		

Appendix G Site Pandemic Response Team Lead Checklist

As it is not possible to predict with certainty the impact of a pandemic or its likely duration, the response must be both forward thinking and sufficiently flexible to respond to unexpected challenges.

Consequently, this checklist is to be regarded as guidance. Specific activities should be brought forward, deferred and supplemented as the situation dictates.

Whilst written specifically for use by the Site Pandemic Response Team, this checklist can be used by other EDF Generation business units

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE A	DEFINITION: Initial monitoring and mobilisation of the response organisation. The phase when the business becomes aware of the potential for a pandemic in the UK. During this phase the primary function of the response organisation will be to monitor the external environment, confirm lines of communications and ensure all business units are prepared for escalation should it be necessary. Business operations will be maintained as normal.		
	Organisation, Interfaces and Communications		
	Appoint Site Pandemic Response Team Lead.		
	Establish local pandemic response organisation.		
	Commence a Pandemic log and document decisions		
	Establish lines of communications with the Generation Pandemic Working Group		
	Ensure local communications and advice is aligned with the communications strategy.		
	Notify all staff of the activation of the pandemic response plan		
	Brief Site Management and other key staff (Shift Manager, first aiders, emergency responders)		
	Brief activation of plan to the following: <ul style="list-style-type: none"> ▪ Local Regulators ▪ Adjacent site ▪ Trades Unions/HESAC ▪ At the nuclear power Stations the Emergency Planning Consultative Committee (EPCC) members/Site Stakeholder groups etc 		
	People		
	Identify any staff/contractors who recently visited a Country/Region affected by the virus and advise on what action to take.		
	Review essential staff lists		
	Identify arrangements for the reporting of absenteeism (i.e. telephone hot line), fitness to return to work and for the provision of advice to off-site staff.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Plant		
	<p>At nuclear power stations as information on the pandemic emerges assess the potential impact of a pandemic on nuclear safety and the continued operation of the reactors.</p> <p>At other operational sites as information on the pandemic emerges assess the potential impact of a pandemic on process safety and the continued operation of the site.</p> <p>Look ahead at the station programme and identify specific vulnerabilities and key hold/decision points for the cancellation/postponement of activities.</p>		
	Other		
	Refresh awareness of the pandemic response plan		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE B	DEFINITION: Heightened monitoring and full mobilisation of the response organisation. During this phase the response organisation will put itself onto a more formal footing. The external environment will be monitored closely, internal and external lines of communication will be formalised, precautionary and educational/awareness raising actions will be initiated. Business operations will be maintained as normal.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale		
	Initiate regular communication with local Regulators and other key stakeholders, seeking agreement on mitigations for reasonably foreseeable problem areas		
	Restate and reinforce central communications		
	Provide regular briefs to Site management team and Generation Pandemic Response Team		
	People		
	Increase area hygiene regime and infection control. Consider additional stocks of appropriate cleaning.		
	Ensure all personnel contact details are accurate in MyHR (Address, home telephone number, mobile number and next of kin) and consider collection of home email addresses.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	<p>Review and update list of essential staff needed to support safe and continued operation:</p> <ul style="list-style-type: none"> ▪ Shift Manning ▪ Emergency scheme/First aid requirements ▪ Site Security ▪ Essential Maintenance ▪ Maintaining staff welfare (first aid/catering/cleaning) etc <p>Identify vulnerabilities and suitable mitigation activity (i.e. refresher training). Build a reserve pool of staff who could be transferred or redeployed to other duties within their competence. Consider staff with latent skills inc. recently retired employees, leavers or contractor staff known to have the competencies to undertake key roles.</p>		
	Review / update list of priority staff who could undertake home working and review availability of IT access rights and hardware		
	Develop and prepare to implement new shift patterns (e.g. Three shift and 12 hour working) and extended working for key staff assuming a 30-60% absenteeism and initiate IR discussions.		
	Identify essential contractors and specialist personnel required to maintain essential business operations		
	<p>Establish processes for:</p> <ol style="list-style-type: none"> 1) Recording staff health and availability 2) Staff to provide early warning of absence – This may be due to personal illness, school/nursery closure, sick dependants, bereavement 3) Staff to be called in at short notice 4) suspending working time directive and prolonged working hours 		
	Communicate the arrangement for reporting absenteeism (hot line), fitness to return to work and for the provision of advice to off-site staff.		
	Make arrangements for the treatment and care of personnel exhibiting symptoms of the pandemic while at work including arrangements to have staff taken home.		
	Ensure staff are adequately brief regarding pandemic preparedness, personal hygiene and other sensible precautions (Align with company communications plan via Generation Pandemic Response Team)		
	Confirm with the Central Team the availability (or not) of a vaccination and, if they exist, arrangements for inoculation of staff. Where a vaccine is available and made available to Generation, work with the appropriate agencies to ensure (essential) staff are inoculated.		
	Plant		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Identify work areas where there may be a threat to process, rule, policy or legislative compliance. Seek internal and/or regulatory advice and guidance.		
	At nuclear power stations - Work Management Dept to generate a three month look ahead MS, EMS and statutory routine schedule compliance report and continue to review current and future station workload. Identify work which can be brought forward and that which could increase the risk to continued operations. Note: Copies of the 3 month look ahead should be sent to Design Authority and site Nuclear Safety Group for their advice and input.		
	Maximise plant and system availability. Consider what activities might be accelerated or brought forward to enable 4 months steady operations (i.e. refuelling)		
	Suppliers and supplies		
	Regularly monitor spent fuel levels to mitigate the threat to continued operations due to potential inability to despatch irradiated fuel from site (e.g. Unavailability of transport or inability of Sellafeld to receive fuel).		
	Other		
	Continue to refine plans and monitor/review preparations		
	Confirm that phase B activities have been considered		
	Advise Generation Pandemic Response Team Lead on the need to transition phases.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE C	DEFINITION: Generation will move into this phase if the pandemic has or has a high potential to have an impact upon normal business. During this phase the response organisation will initiate a series of predetermined actions to minimise the potential impact of pandemic upon safe and continued operation. This phase may include a phased reduction in non-essential business operations in order to preserve and protect key personnel roles and functions.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Clearly communicate to all staff the expectation that human performance tools use shall be enhanced, help sought in making decisions and support to colleagues increased (Particularly where staff are upgrading). Note: It may also be necessary to relax other expectations (E.g. Completions of appraisals, management reporting, non-essential training)		
	Site Pandemic Response Team to meet on a daily basis including weekend cover and confirm membership of the MRRG.		
	Formalise the process for recording actions, issues and decisions (including ODMALs and MRRG Maintenance Assessment forms A – Appendix D) using the pandemic diary proforma (Appendix H)		
	Using the pandemic diary, implement daily reporting of site situation to Generation Pandemic Response Team (and others as required).		
	Increase internal communications (restating and reinforcing central messages).		
	At nuclear power stations maintain communications with EPCC members and local stakeholders		
	People		
	Commence daily monitoring of staff health/presence on site		
	Reinforce arrangements for the reporting of absenteeism, fitness to return to work and the arrangements for the provision of advice to off-site staff.		
	Initiate daily contact with staff who are absent and/or working from home to help maintain a forward view of staff availability and welfare		
	Arrange for staff who are no longer infectious to return to work as soon as they feel fit enough to do. (Guidance to be provided by Chief medical officer/Occupational Health)		
	Continually assess the impact of the pandemic on staffing levels		
	Implement arrangements for the management of staff exhibiting symptoms of the pandemic while at work. Advise anyone who begins to exhibit pandemic related symptoms to inform their supervisor by telephone and go directly home (if they feel well enough to drive), avoiding contact with fellow workers if possible. Consider the disinfection of work areas.		
	Identify those who have been in recent contact with any staff exhibiting viral like symptoms and consider keeping these persons off-site during any incubation period.		
	Where available, confirm and communicate the arrangements and timing for the administration of anti-virals.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Limit/Stop all but essential gatherings (meetings, travel, receipt of visitors, non-essential training, drills, canteen use through staggered breaks) and limit onsite movement etc.		
	Implement arrangements for flexible working (inc suspension of the working time directive, use of extended work hours, home working, relaxation of holiday arrangements, cancellation of holidays).		
	Plant		
	At nuclear power stations optimise forward work plan based upon predicted staff availability and MS, EMS and statutory routine schedule workload e.g. Bring forward labour intensive work or compliance/essential work.		
	Maximise plant and system availability deferring all non essential work		
	At nuclear power stations confirm/ Increase resilience of the DART/TAG organisation for problem solving and important defect rectification.		
	Consider isolation of internal building ventilation systems to prevent spread of the virus.		
	At nuclear power stations produce station specific category 3 trigger EC that will initiate the MRRG. This EC shall not be implemented until Phase D following the declaration of a Station Pandemic Situation (Appendix J) by the Station Director. Note 1: Any category 1 change shall not be deferred and normal arrangements shall continue to apply. Note 2: For any Maintenance Schedule routines with a MS interval of >3 months normal arrangements shall continue to apply.		
	Supplier and supplies		
	Maintain essential stock at as close as possible to maximum and maintain links with suppliers of all strategic stock in order to keep updated regarding suppliers position. i.e. <ul style="list-style-type: none"> ▪ Water supplies ▪ Carbon dioxide (At nuclear power stations) ▪ Electricity supply ▪ Natural gas supplies ▪ Fuel Oils/Diesel ▪ Plant chemicals (acids, caustics, ammonia, nitrogen, hydrogen etc) ▪ Welfare stocks (i.e. hygiene related, canteen stocks etc) 		
	Agree the absolute minimum stock levels with the Station Director/Plant Manager/General Manager and communicate to Shift Managers.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	Inform the Generation Pandemic Response team of any potential supply problems.		
	Other		
	At nuclear power stations maintain links with local off-site emergency services and other local EP responders to ensure their status is known.		
	Confirm that all phase C activities have been considered/implemented		
	Advise Central Pandemic Response Team Lead on the need to transition phases.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE D	DEFINITION: Generation will move into this phase if the pandemic has or has the potential to have a significant impact upon business continuity including security of supply (i.e. widespread cases of the pandemic in the UK and/or inside the Company). During this phase the organisation will initiate further actions to minimise the impact of pandemic upon safe and continued operation. The organisation will focus on essential operations to ensure nuclear safety.		
	Organisation, Interfaces and Communications		
	Communicate phase change and rationale		
	Activate changed regulatory compliance arrangements in consultation with central pandemic lead and local regulators (where available). Including: <ul style="list-style-type: none"> At nuclear power stations activate the MRRG to support the ODM/ODMAL process (Appendix D) if the Station Director declares a Station Pandemic Situation (Appendix J). Implementing enhanced internal oversight of decision making. Reviewing the requirements set down in reference 1. 		
	At nuclear power stations formally document in ODMALs any temporary arrangements and decisions and copy documentation to the central pandemic response team		
	At nuclear power stations where special operating conditions apply, issue Temporary Operating Instructions or similar to the staff concerned. For operations staff these will be specifically marked for review by oncoming staff.		
	Refocus/Strengthen communications recognising many staff will be not be in the work place.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	People		
	Using the proforma in appendix H, ensure that essential staffing levels are maintained through the implementation of extended working hours, home working, 24 hour working (i.e. staff sleeping at the sites), changes to shift patterns etc.		
	If predicted that declared essential staffing levels cannot be maintained, assess the risk to safety and compliance in the context of the national need for electricity production and using the ODM/ODMAL process and the pandemic principles agreed with regulators determine and document the appropriate course of action.		
	Provide advice to staff on appropriate implementation of: <ul style="list-style-type: none"> ▪ Personal hygiene/social distancing ▪ Action to be taken if staff feel/become unwell ▪ Advice to staff on absence relating to caring for dependents ▪ Travel restrictions. ▪ Restriction on visitors ▪ Stopping non essential work (inc meetings, training, appraisals and other gatherings) ▪ Working from home ▪ Changes in working patterns (inc shift working) ▪ Essential staffing ▪ Monitoring for signs of stress 		
	Implement heightened oversight arrangements for the monitoring of stress in key staff (this should specifically focus on staff who are 'upgrading').		
	At nuclear power stations if, it is difficult to conduct medical reviews for radiation workers, extend the validity of their classification by up to one month. Note: This only applies to those whose dose in the current year does not exceed 80% of the permitted annual dose.		
	Plant		
	At nuclear power stations if the Station Director declares a Station Pandemic Situation (Appendix J), implement the category 3 trigger EC to allow the MRRG to suspend or postpone tasks with an interval <3 months according to the available resources and the significance of the task for nuclear safety and continued generation.		
	Review and prioritise work (and the resources available to conduct and sign off work) to ensure that equipment with a safety function is prioritised.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
	If plant/equipment with emergency or safety duties cannot be satisfactorily maintained assess the risk in the context of the prevailing national need for electricity production, apply the ODM/ODMAL process		
	Keep appropriate regulators informed of any changes necessary to agreed arrangements.		
	As a protection measure against the temporary loss of the work management system produce weekly 3 month look ahead reports to assist assessment of sites work.		
	Supplier and supplies		
	Continue to monitor and maintain consumables/stocks levels. If levels cannot be satisfactorily maintained assess the risk in the context of the prevailing national need for electricity production, apply the ODM/ODMAL process. Where stock holdings cannot be maintained above the absolute minimum stock level take appropriate action to shutdown the operating reactors.		

PHASE	ACTIVITY	<input type="checkbox"/>	NOTES
PHASE E	DEFINITION: Generation will move into this ‘recovery’ phase once the outbreak has been declared over and sufficient staff have returned to work to enable normal working arrangement to be restored. During this phase the response organisation will ensure a phase and controlled transition back to normal business operations.		
	Confirm that the pandemic has ended or has subsided sufficiently to enable normal arrangements to be reinstated. Communicate phase change and rationale.		
	Confirm sufficient staff have returned to work to enable return to normal operations		
	Review all decisions (ODMALs) taken during the event and determine appropriate back out criteria		

PHASE	ACTIVITY	☐	NOTES
	Develop a recovery plan to return to normal operations including a review of all cancelled/suspended work. This shall include: <ul style="list-style-type: none"> • At nuclear power stations Maintenance Schedule backlog reduction programme. • Forward maintenance schedule strategy • Forward Statutory schedule strategy e.g. PSSR overspeed test of prime movers etc • Updating for work management system records backlog • SQEP certification/authorisation/training • At nuclear power stations medical reviews for radiation workers • Review of suspended non-essential work 		
	Develop support to enable all staff affected by the pandemic to return to normal.		

Appendix H Pandemic Diary

This form is intended as an aid for Site Pandemic Leads when giving verbal feedback at meetings of the Generation Pandemic Response Team. Site Pandemic Leads should give verbal feedback by exception only, on any category of the report.

In addition the completed diary shall be retained as a record until the pandemic response organisation has been stood down and post pandemic lessons learned reviews have been completed.

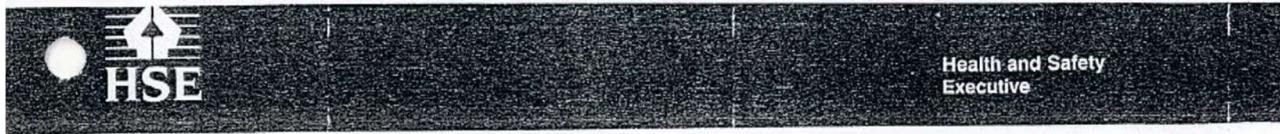
Location:		Prepared By:	
Date:		Plan Phase:	

Staffing			
EDF Generation	Number	%	Comment (Impact/Threat/Action)
Number of employees		-----	
Absence due to pandemic virus			
Absence for other illness			
Overall Absence			

Contract Partners	Number with virus	Comment (Impact/Threat/Action)

Essential Staffing / Critical Groups	Number virus	Comment (Impact/Threat/Action) <i>Identify any specific threats to essential i.e. shift manning, emergency scheme, single SQEP, vulnerable groups</i>

Issues	Comment (Impact/Threat/Action)
Plant	<i>Identify any specific threats to continued safe operation and maintenance due to predicted staff/contractor absence.</i>
Stocks/Supply Chain	<i>Identify any specific threats to strategic stock, supplies and services caused</i>
Regulation/Compliance	<i>Identify any specific compliance/regulatory threats caused by pandemic</i>
Other	<i>Any other pandemic related threats/issues the Company and/or other locations should know about</i>
Support Required	<i>Identify any specific compliance/regulatory threats caused by pandemic</i>

Appendix I ONR response for nuclear power stations

Mr P Prozesky
CNO Region 3
British Energy Generation Limited
Barnett Way
Barnwood
Gloucester GL4 3RS
Date: 9 March 2010

ND
Reference: 2010/119233

Unique
Reference: GEN 71280

Nuclear Directorate
HM Nuclear Installations Inspectorate

John Sandford
HM Superintending Inspector of
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Dear Mr Prozesky

Thank you for your letter GEN32044R, dated 6 October 2009, titled NP/SC 7573 GENERIC - PRINCIPLES FOR SAFE OPERATION IN THE EVENT OF A FLU PANDEMIC. I note that the recommendations in the attached paper, which outlined the principles proposed, were accepted by your Nuclear Safety Committees on 18 August 2009. I am also aware that you had also developed management arrangements, with oversight at board level, in order to proactively manage the effects in the event of significant unavailability of key staff in accordance with these principles.

It would appear that the evolution and spread of the swine flu infection has had far less impact than originally predicted and consequently you have stood down your arrangements. However, for the record, I confirm that I am content with the principles proposed in the paper and believe them to be a sound basis to respond to any future similar threat to staffing levels at the power stations. I would like to thank you for the information and support provided by your staff in helping us reach our conclusion.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Sandford', is written over a white rectangular area.

JOHN SANDFORD
HM Superintending Inspector
(Nuclear Installations)
Direct Line: 0151 951 4822
Email: john.sandford@hse.gsi.gov.uk

Appendix J Guidance on 'Station Pandemic Situation' Declarations

The 2009 flu pandemic safety case (NP/SC 7573) introduced the declaration state of 'Station Pandemic Situation' as a formal change in status once staffing levels have fallen to a level that does not permit normal operations to continue. This concept has been carried forward in the updated pandemic safety case (NP/SC 7803). This declaration is used to avoid the need to use other declaration states (such as operational alert or LC11 emergency declarations) since specific company arrangements have been made to manage a pandemic situation as set out in this document. Use of operational alert in parallel may be detrimental and should be avoided unless the pandemic arrangements are insufficient to manage the situation. Once a Station Pandemic Situation declaration has been made, the safety case permits suspension of some maintenance, subject to specific requirements being met, as set out in reference 5.

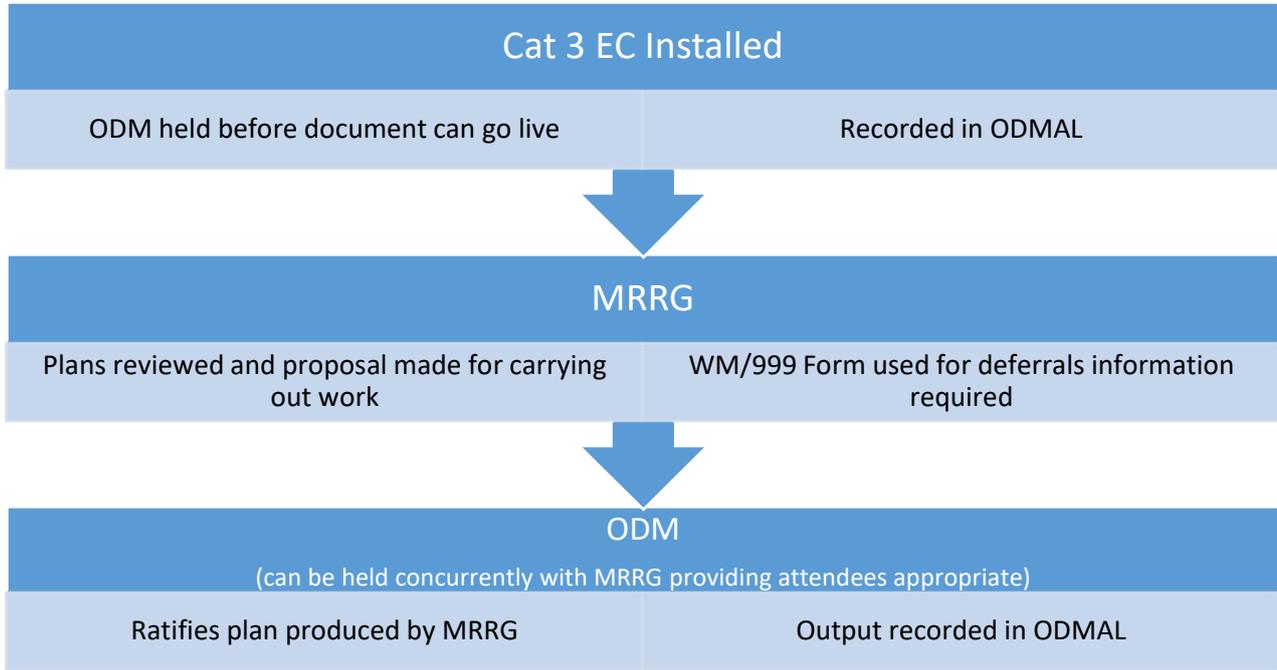
While not a defined state with clear entry and exit criteria, the following guidance has been provided to assist with determining that the situation has reached the point that it is appropriate to declare a Station Pandemic Situation. The Station Director (or their delegate) has the authority to make the declaration whenever they believe the situation requires it in order to maintain the principles established by the safety case.

- It is expected that the station will already be operating within phase D of the pandemic plan. There would be a significant and ongoing unavailability of staff, either due to confirmed infection or to them self-isolating.
- Through the preparatory work completed in previous phases, and ongoing in phase D, the MRRG will have identified specific maintenance requirements that are under threat, or conflict with higher significance activities that should take precedence.
- There is no reasonable expectation that the situation would improve in short timescales to enable work to proceed as normal. For instance, if a number of people are expected to become available to return to work following a stipulated period of isolation then their additional resource should be considered in determining the need for a declaration.
- If sufficient staff could be made available to complete the required work then the work should continue even if additional reasonably practicable measures are needed to ensure the spread of infection is strictly controlled. For instance, where staff have been isolated to prevent spread of infection, but are themselves free of infection, controlled measures should be implemented to allow the planned work to be carried out. It is not sufficient to suppose the planned work cannot be completed just because the required staff are not on site.

When the staffing situation at station improves, consideration should be given to standing down from the declaration state at the earliest opportunity to support return to normal operations and recovery. The station pandemic response team should consider this on a daily basis once the declaration has been made. Stand down should not be delayed unnecessarily on anticipation of further impact in future, unless there is a further confirmed and imminent threat to specific maintenance requirements. It is accepted that a new declaration may need to be made later. Exiting and re-entering the declaration state is important to maintain healthy nuclear safety culture and to avoid normalising the state over a prolonged period.

Appendix K Guidance on the Role of the ODM and the Formation of the MRRG

Figure 2 Maintenance Deferral Process Map



Once the Cat 3 EC is implemented, an initial ODM nominates and agrees the members of the MRRG. The MRRG reviews the plan and resource availability and formulates a constrained plan. This is ratified by an ODM and recorded in ODMAL.

If appropriate attendees are in place these meetings (MRRG/ODM) can be combined.

Sources to inform risk-based decision-making

TO BE REVIEWED AS A RESULT OF OPEX AFTER A MAXIMUM OF 14 DAYS

Station status and prevailing nuclear safety risk	Sources to inform risk-based decision-making
At-power Low intrinsic nuclear safety risk (modern design) (HYB/TOR/SZB)	<ol style="list-style-type: none"> 1. Risk monitor 2. Tech spec action condition required completion times 3. PSA and safety case
At-power Higher nuclear safety risk (than other sites)	<ol style="list-style-type: none"> 1. Tech spec action condition required completion times 2. LSD event trees 3. PSA and safety case
Long-term shutdown And so low prevailing nuclear safety risk	<ol style="list-style-type: none"> 1. Tech Spec shutdown availability rules 2. Safety case and LSDs

This guidance does not account for the detail of station design / safety case. The aim of this list is to provide SQEPs with guidance on decision-making.

- If available, then use 'Risk Monitor' which is already used for risk-informed decision-making e.g. SZB/LI/020/033.
- Tech Spec Action Condition required completion times – The required completion times have been defined based on risk. In general, the shorter the time related to unavailability of a system, the higher its nuclear safety significance.
 - a. 31 day. 'Normal maintenance.' System allowed to be unavailable for a prolonged period. Unavailability will generally be of lower nuclear safety significance.
 - b. 7 day / 36 hours. 'Urgent maintenance.' System unavailability will generally result in a higher increase in risk e.g. loss of single-failure tolerance for some faults.
 - c. 4 hour Shutdown Condition. Generally means there is not a safety case for continued operation which strongly suggests a high risk increase.
- Tech Spec Shutdown availability rules – Pre-defined risk-based rules. If availability combination is permitted then this will previously have been assessed and shown to be allowed, though clearly as availability is reduced, risk increases.
- Living Safety Documents (LSDs) – Provide summary of safety case, fault schedule and basic event trees which may provide useful information in gauging system importance. The event trees provide high/medium/low classification for DB5 releases, which may be useful.
- Probabilistic Safety Analysis (PSA) will provide the most detailed risk position for a running unit and can be used to gauge the risk significance of system reliabilities. May take time to extract and interpret information. Pre-prepared listings of high importance systems have already been prepared for the Pandemic Safety Case NP/SC 7803.
- Safety Case – Will define claims on systems and may provide explanation for frequency in MITS. However, this may take time to extract and interpret information.
- Consideration whether not performing the MITS will actually affect reliability of the item if a demand is placed (e.g. diesels or relays) or if it is more focussed on supporting a numerical claim in the safety case.
- The importance of continued generation to support the National Grid during a pandemic is controlled using the following actions:
 - The CCR has routine communications with National Grid Control Centre.
 - Daily Ops Focus (12:30) includes the state of national resilience picture.
 - Daily communications through Generation Pandemic Team.
 - Advice from Exelon website and NISMs (Notification of Insufficient System Margin) following standard industry practice.
- The Shift Manager has responsibility for nuclear safety and can shut down the station if necessary. The need to shutdown should be considered at shift handover.

Other key guidance

Consider following, if practicable:

- Where there are multiple lines of an essential function, avoid deferring MIT on both lines.
- Prioritise the first line, if practicable. This particularly applies to PTSE, trip, shutdown/holddown.

Consider other inputs to inform reliability of system:

1. Experience, knowledge, judgement of system owner, and operator*.
2. Other MIT results i.e. are there other indicators of system reliability.
3. Historical performance.
4. OpEx.
5. Availability of other prompts e.g. indications/alarms.
6. Manufacturers recommendations.

* Engineering judgement should be taken into account alongside PSA analysis in these situations. The experience of our operators that carry out maintenance on these systems frequently can be used as an attributing factor for decision making by the MRRG.

Multiple deferrals:

1. The assessed reliability of a system will reduce as MIT frequency reduces. Therefore, continued deferral will continue to reduce assessed reliability. However, the real reliability of a system is likely to be governed by a complex set of inputs. See above.
2. Whilst they should be avoided if practicable, multiple deferrals are permitted depending on the risk. E.g. multiple deferral of a low risk significance system may be better than single deferral of a high-risk significance system.
3. Multiple deferral implies increasing divergence from the underlying safety case. Consider a deeper review of the safety significance and safety case prior to multiple deferral (if practicable, noting that the first deferral could provide time for a deeper investigation).
4. All else being equal, stagger, rather than have multiple deferrals, if practicable i.e. alternate deferral of the same MIT.

Aggregation of Risk

Monitor the aggregation of risk from multiple deferrals either on a single essential safety function or across related systems (e.g. a fault initiator and a line of protection in a single fault sequence)

Calibrations:

1. Calibrations fall under the guidance in this note.
2. It is noted that some calibrations are required in response to reactor operation e.g. movement of control rods will lead to reactor trip if not carried out. This would increase the priority of these calibrations.

Where risks of deferral can be mitigated by a change in reactor operation, this should be considered (bearing in mind the safety benefit of steady operation). There may be other legal requirements that must still be upheld e.g. Pressure Safety Systems Regulations.

For information

Bear in mind that not all DB5 releases are equal. In general, failure of post-trip sequencing equipment, trip and shutdown/holddown are low contributors to total DB5 frequency but failure of these systems can lead to a rapid (seconds/minutes) severe fault sequence. Failure of PTC will eventually lead to a severe fault sequence evolution but over much longer timescales (hours) with more obvious opportunities for recovery.

This appendix does not amend the normal categorisation process.

Inputs to consider when deciding on categorisation of deferral:

- Boundary of Pandemic Safety Case – national risk may be relatively low, therefore scope for justifying deferrals is correspondingly low.
- The judgement on the risk significance of the deferral.
- The number of deferrals on the system.
- The nature of the claim on the MIT e.g. does it support a claim on initiating event frequency which places greater demand on protection systems.

Category 1 Deferrals:

The definition of Category 1 is as follows:

A proposal affecting nuclear safety, which, if inadequately conceived or executed, might lead to a serious increase in the risk of a radiological hazard; or which involves significant alteration to the principles on which safety arguments have been based;

The emphasis for categorisation appears to be starting with the radiological consequence of an inadequately conceived or executed activity. However, it would appear that even when the starting point is a very specific off-site release criterion, say, the processes still always leave room for application of judgement in the overall categorisation decision. This experience (and our own Company's) reinforces the conclusion that there will always be a need for judgement when determining categorisation.

The approach chosen here has been to initially reach a good conceptual understanding of the factors that are weighed in categorisers' minds when reaching their judgement. These factors have then been incorporated into a "map" of the three nuclear safety related categories onto which proposals can be plotted (Figure 3). In this way it is hoped that a clearer understanding of exactly why proposals are categorised the way they are can be reached. Further guidance on the aspects of categorisation and the categorisation concept map can be found in Reference 9.

Figure 3 Categorisation Concept Map

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