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Civil Nuclear Reactor Programme - New Build Licensing

NNB GenCo Arrangements for Organisational Learning and the Notification of Incidents

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ASSESSMENT REPORT

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ASSESSMENT REPORT

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EXECUTIVE SUMMARY**ASSESSMENT OF NNB GENCO ARRANGEMENTS FOR ORGANISATIONAL LEARNING AND THE NOTIFICATION OF INCIDENTS****BACKGROUND**

In July 2011, NNB GenCo applied for a Nuclear Site Licence to construct and operate a new installation at Hinkley Point C (HPC). In considering this application, ONR has divided pre-licensing inspections into a number of work-streams. This report presents the findings from ONR's assessment of organisational learning and the notification of incidents under Licence Condition 7 (LC7), conducted under New-Build work-stream 8, which also covered emergency arrangements.

Whilst there are no nuclear activities on the unlicensed site at Hinkley Point C, NNB GenCo is carrying out major earth-works and infra-structure development. To support these activities, NNB GenCo has developed a suite of arrangements covering Organisational Learning and incident notification over the past two years. NNB GenCo has appointed a number of staff and has developed new systems of notification and organisational learning for conventional safety, benefitting from experience in other organisations.

ASSESSMENT AND INSPECTION WORK CARRIED OUT BY ONR

ONR inspected NNB GenCo arrangements for notifying, investigating and learning from incidents and accidents of all types, on and off the HPC site. ONR assessment included 4 inspections at Hinkley Point C and 2 meetings at the headquarters of NNB GenCo in London, to review procedures, gather evidence of implementation and obtain improvements where necessary.

MATTERS ARISING FROM ONR'S WORK

Including the clarifications to procedures provided as a result of the ONR intervention, NNB GenCo procedures have generally been of high standard. It was not however possible to sample nuclear Operational Experience (OPEX) as no physical nuclear activities are being undertaken. NNB GenCo has conducted a number of investigations into incidents of a conventional nature but these have not produced the types of cross-cutting learning that might be expected of nuclear work, still less any requirement for notification under LC7. Consequently, ONR has made it clear that it may be necessary to review and sample nuclear OPEX and feedback during future phases of the project. The French design offices in EDF and Areva acting as architect-engineer will have access to construction OPEX from Flamanville 3 and Olkiluoto 3 which will be relevant. All assessment issues relevant to this phase of project have been satisfactorily closed out.

CONCLUSIONS

ONR has inspected the arrangements made by NNB GenCo for compliance with LC7 and for organisational learning, and considers these sufficient to support an application for a Site Licence. ONR has also sampled the application of those arrangements, at Hinkley Point C and at their project-office in London, finding that NNB GenCo apply their own arrangements vigorously.

I am content that NNB GenCo now has adequate procedures in place to comply with LC7 and that these procedures would satisfy LC7 requirements for early phases of the construction program.

RECOMMENDATION

As far as LC7 is concerned, I recommend that a Nuclear Site Licence should be granted to NNB GenCo to install and operate a nuclear installation at its site located at Hinkley Point C.

I also recommend that NNB GenCo's procedures (arrangements) for LC7 compliance and their implementation are inspected by Hinkley Point C's nominated site inspector during future phases of the project to ensure that nuclear OPEX is incorporated as it becomes available.

LIST OF ABBREVIATIONS

ALARP	As low as is reasonably practicable
BMS	(ONR) How2 Business Management System
CNEN	Centre National d'Équipement Nucléaire
EDF	Électricité de France
HP B/C	Hinkley Point B or C
HSE	Health and Safety Executive
IAEA	International Atomic Energy Agency
LC	(Nuclear) Licence Condition
MEVL	Mandatory Evaluation
NNB	(EDF) New Nuclear Build
OEF	Operational Experience Feedback
OL	Organisational Learning
OLIM	Organisational Learning Information Management (database)
ONR	Office for Nuclear Regulation (an agency of HSE)
OPEX	Operational Experience
PID	Project Initiation Document
PMS	Performance Management System
QA	Quality Assurance
RGP	Relevant Good Practice
SAP	Safety Assessment Principle(s) (HSE)
TAG	Technical Assessment Guide(s) (ONR)
WENRA	Western European Nuclear Regulators' Association

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1 INTRODUCTION

1 ONR is currently assessing NNB GenCo's application for a Nuclear Site Licence to install and operate a two-unit UK EPR at Hinkley Point C, on a site adjacent to the former Magnox station at Hinkley Point A, which is now being decommissioned.

2 This report presents the findings from ONR's assessment of organisational learning and the notification of incidents under Licence Condition 7 (LC7). This work was conducted under ONR New-Build work-stream 8, which covered emergency arrangements and the handling of incidents.

3 Over the past two years, NNB GenCo has developed a suite of arrangements covering Organisational Learning and incident notification. Whilst there are no nuclear activities on the unlicensed site at Hinkley Point C, NNB GenCo is carrying out major earth-works and infra-structure development. To support these activities, NNB GenCo has appointed a number of staff and has developed new systems of notification and organisational learning for conventional safety, benefitting from experience in other organisations.

1.1 Background

4 This report presents the findings of my assessment of the arrangements for Organisational Learning and the notification of incidents as presented by NNB GenCo in relevant guides and procedures (Ref. 8, 9, 10, 12 and 21) and supporting documentation provided by NNB GenCo. Assessment was undertaken in accordance with the requirements of the Office for Nuclear Regulation (ONR) How2 Business Management System (BMS) procedure AST/001 (Ref. 1). The ONR Safety Assessment Principles (SAP) (Ref. 2), together with supporting Technical Assessment Guides (TAG), (Ref. 3) have been used as the basis for this assessment.

1.2 Scope

5 A number of interventions were undertaken in the course of this assessment. This assessment work-stream covered;

- Notification, investigation and reporting in the context of LC7.
- Notifications to ONR under other relevant statutes.
- Organisational Feedback and Learning.

6 Some areas not included in this assessment are listed in section 2.7 of this report.

1.3 Methodology

7 The methodology for the assessment follows ONR BMS document PI/FWD, AST/001, Assessment Process (Ref. 1), in relation to mechanics of assessment within the Office for Nuclear Regulation (ONR).

8 ONR inspected NNB GenCo arrangements for notifying, investigating and learning from incidents and accidents of all types, on and off the site. ONR assessment included 4 inspections at the Hinkley Point C (HPC) site and 2 meetings at the headquarters of NNB GenCo at the Qube in London. In these inspections, ONR reviewed procedures, gathered evidence of implementation and obtained clarifications and improvements where necessary.

2 ASSESSMENT STRATEGY

9 In the event of an incident or accident on a nuclear licensed site, various statutes and regulations require Licensees to notify ONR, investigate the event and report appropriately so as to avoid recurrence. Specifically, nuclear site Licence Condition 7 requires;

(1) The licensee shall make and implement adequate arrangements for the notification, recording, investigation and reporting of such incidents occurring on the site:

(a) as is required by any other condition attached to this licence;

(b) as the Executive may specify; and

(c) as the licensee considers necessary.

(2) The licensee shall submit to the Executive for approval such part or parts of the aforesaid arrangements as the Executive may specify.

(3) The licensee shall ensure that once approved no alteration or amendment is made to the approved arrangements unless the Executive has approved such alteration or amendment.

10 The purpose of this Condition is to ensure that the Licensee has adequate arrangements to deal with incidents that may occur on the licensed site. It is essential that the Licensee keeps a record of all such incidents, notifies ONR (and others) when appropriate, investigates the cause of each incident and produces a report of the investigation to allow lessons to be learnt.

11 Since one of the main purposes of LC7 is to avoid any recurrence of accidents, the regulation of LC7 is often coupled with oversight of Licensee processes that provide Organisational Learning. The whole cycle of notification, investigation, reporting and learning is given various names, including Feedback from Operational Experience "OEF" or Organisational Learning "OL". The data containing experience or associated learning are often called OpEx for convenience.

12 Whilst conditions 7.1(b) and 7.2 give ONR powers to specify and approve the arrangements, ONR did not apply these powers as part of this intervention. This intervention concentrated on NNB GenCo's own arrangements and evidence for their application.

13 With its application for a Nuclear Site Licence for Hinkley Point C (HPC), NNB GenCo also provided ONR with a 'compliance matrix', Ref. 7. The compliance matrix for LC7 divided arrangements for compliance into phases covering; pre-licensing, construction and later phases.

2.1 Standards and Criteria

14 The relevant standards and criteria adopted within this assessment are principally the Safety Assessment Principles (SAP), Ref. 2, the internal ONR Technical Inspection Guides (TINS), Ref. 3, relevant national and international standards and relevant good practice informed from existing practices adopted on other UK sites. National and international standards and guidance have been referenced where appropriate within the assessment report. Relevant good practice, where applicable, has also been cited within the body of the assessment.

2.2 Safety Assessment Principles

15 The key SAP applied within the assessment is listed in Table 1 of this report. In summary, this states that lessons should be learned from internal and external sources and provides relevant guidance.

2.3 Technical Assessment Guides

16 The following Technical Assessment Guides have been used as part of this assessment (Ref. 3a and 3b):

- T/INS/007 LC7 “Incidents on the Site” and Other Reporting and OE Processes
- G/INS/007 Guidance for Notifying and Reporting Incidents and Events to ONR

17 Ref. 3a provides instructions to ONR Inspectors on how to conduct inspections against LC7 and OEF processes generally. Ref. 3b is written for Licensees and other duty-holders and defines the criteria whereby ONR expects a report, with examples.

2.4 National and International Standards and Guidance

18 The following international standard has been used as part of this assessment:

- IAEA Safety Standard NS-G-2.11 A System for the Feedback of Experience from Events in Nuclear Installations (Ref. 5).

19 This standard describes good practice for screening, investigation, corrective actions, trending, review, QA and reporting. It was published in 2006 and has been applied by many nuclear operators and regulators around the world.

2.5 Use of Technical Support Contractors

20 Technical Support Contractors were not employed for this assessment.

2.6 Integration with other Assessment Topics

21 Since a principal aim of LC7 is to avoid the repetition of accidents, the notification of incidents is generally assessed in conjunction with organisational learning. In turn, organisational learning relates to safety management systems generally. Consequently, this intervention was undertaken jointly by the Site Inspection Unit CNRP-B, the Organisational Capability and Site Licensing Unit CNRP-G and the OpEx Unit 3C in ONR

2.7 Out-of-scope Items

22 The following items were outside the scope of this assessment.

- Notification of incidents and events outside the scope of G/INS/07, such as environmental events.
- Emergency Procedures, which were covered under the ONR LC11 intervention.
- Actual nuclear events generated by NNB GenCo, see below.

23 It was not possible to sample nuclear OpEx as there were no real nuclear activities being undertaken by NNB GenCo. The investigations sampled by ONR have not resulted in the types of cross-cutting learning that might be expected of nuclear work, still less any requirement for notification under LC7. ONR has made it clear that it may be necessary to review and sample nuclear OpEx and feedback, particularly from the architect-engineer during future phases of the project. The French design offices in EDF and Areva act as architect-engineer and have access to OpEx from Flamanville 3 and other new projects. Construction and commissioning OpEx from these projects would be particularly relevant.

3 LICENSEE'S SAFETY CASE

- 24 NNB GenCo's approach has been to develop its nuclear arrangements in parallel with existing arrangements for notification and Operational Experience (OpEx) systems that support conventional safety at its Hinkley site (HPC). Nuclear arrangements (Ref. 8, 9, 10, 12 and 21) have been generated centrally, by project-office staff at the Qube in London. Staff at HPC operated initially separate systems for conventional safety covering civil (non-nuclear) works on the site.
- 25 The NNB GenCo Organisational Learning Specialist is based at their project-office at the Qube in London, supported by one OL coordinator. At HPC, OpEx matters now fall under the site's business manager who is also supported by a local OL coordinator. Responsibility for ensuring that notifications of conventional accidents rests with the organisational units undertaking the work, facilitated by the conventional safety team comprising the HPC site safety manager and his staff. The site safety team also manages a legacy system for conventional OpEx which provides the significant input in terms of conventional OpEx. This was inspected by ONR but will not form part of their nuclear arrangements.
- 26 NNB GenCo encourages the gathering of relevant Organisational Learning by many routes. Some external OpEx enters HPC directly and is conventional in nature. However their project-office is the principal hub for coordinating external OpEx, because NNB GenCo operates on several sites and because the Project Office coordinates interactions with EDF France.
- 27 In addition to writing nuclear procedures and coordinating the project office OpEx, staff at the Qube have also implemented an Organisational Learning Information Management (OLIM) database package which they are rolling out across the project office and HPC.
- 28 Meetings are held to screen events of importance and to manage their follow-up. These screening meetings are held on a roughly weekly basis at both locations.
- 29 NNB GenCo has identified a number of staff positions with responsibility for OpEx, including OL coordinators and OL managers. They also identify one OL Champion in each of the functional units listed in Table 2, to help motivate the generation and use of OpEx throughout the organisation.

4 ONR ASSESSMENT

- 30 ONR reviewed NNB GenCo documents that collectively specified their arrangements for compliance with a nuclear site licence (including Ref. 8 and 10). ONR also reviewed a number of documents and guides that supported the arrangements (including Ref. 9 and 12). ONR also sampled the implementation of these arrangements by inspections of;
- Records for role definitions, competency, training, manning levels etc.
 - Software, databases and spreadsheets.
 - Follow-up actions.
 - Actual events and learning reports.
 - Identifying and interviewing five OL champions for various topics.
 - Reviewing NNB GenCo's own self-assessments.
- 31 These areas are reported in sections 4.1, 4.2 and 4.3 of this report, under headings of Compliance, Learning and Capability. Other points at which a notification would be triggered were also discussed with NNB GenCo.
- 32 NNB GenCo and ONR first met to discuss LC7 in January 2011, that intervention concentrated mainly on Operational Experience (OE) and concluded that good progress was being made. Since then ONR has published new guidance to Licensees and duty-holders for the notification of incidents in Ref. 3b . ONR inspections of LC 7 at NNB GenCo recommenced in January 2012. Ref. 6 lists all the ONR interventions on LC7.
- 33 ONR examined the "compliance thread" through the procedure for Organisational Learning (Ref. 8) and related documents such as Ref. 9, 10, 12 and 21. ONR made a number of comments on these, to which NNB GenCo responded by updating their documentation. Further details are provided in section 4.1.1 in this report.
- 34 The NNB GenCo programme to implement new OpEx arrangements took more time to complete than originally expected, which led to minor delays in some responses to ONR actions. In part this was caused by increasing demands and complexity that NNB GenCo put into new software for OpEx implemented at the Qube and HPC.
- 35 During January and February 2012, ONR gathered evidence of the Operational Experience (OpEx) process for construction-site safety at HPC. The principal means of recording data relating to incidents and organisational learning at HPC was a spreadsheet containing over 800 records and residing on their corporate network. At this time, NNB GenCo declared plans to extend and improve OpEx processes with the provision of more personnel and implementing their nuclear Organisational Learning Information Management database (OLIM) at site. ONR concluded that systems supporting notifications and OpEx for conventional safety were vigorous and effective.
- 36 Whilst NNB GenCo was trying to coordinate its arrangements for OpEx between the project-office and the site, in March (Ref. 6c) communications between the two locations appeared weak to ONR. ONR advised NNB GenCo of this in April 2012, which led to a re-appraisal of corporate input by NNB GenCo, in terms of both management and practice. The NNB GenCo Safety Director attended several of our meetings and a number of papers were presented to the NNB GenCo Board for review, Ref. 13, 14 . These strengthened the collective understanding of OpEx within NNB GenCo,
- 37 Subsequently, NNB GenCo appointed additional staff to handle OpEx information at HPC. This resource complemented an existing resource at the Qube. Throughout, NNB GenCo
-

staff demonstrated a good personal commitment to Organisational Learning and related matters.

38 At our April meeting, NNB GenCo provided more reassurance of corporate input to OEF and this was tested by further sampling by ONR by inspections at HPC in June and July 2012 (Ref. 6).

39 Finally, ONR selected and interviewed a number of OL topic champions from the list in Table 2, during the intervention in June 2012 (Ref. 6e). Champions from the functions; Manufacturing Inspection, Assurance, Design Authority, Training and Industrial Safety were interviewed. Without exception, all the interviewees;

- Had received detailed and specific training from NNB GenCo in corporate OL procedures.
- Could give examples of the generation and application of OpEx specific to their functional areas, as distinct from generic examples.
- Appeared well-motivated.

40 Including the clarifications to procedures that NNB GenCo provided as a result of the ONR intervention, NNB GenCo procedures have generally been of high standard. The following sections of my report detail the inspections and assessment that I undertook in coming to my conclusion. My report is divided into two main subsections; Notifications and Compliance and Organisational Capability and Learning.

41 These interactions with NNB GenCo (Ref. 6) provided confidence to my assessment of Organisational Learning in NNB GenCo.

4.1 Notifications and Compliance

42 NNB GenCo provided a “compliance matrix” which was a high-level document that indicated the status of NNB GenCo procedures and linked them with Licence Conditions. My assessment of this appears in section 4.1.1 of my report. The central NNB GenCo document linking all their processes for capturing learning and making regulatory notifications is their procedure for Enabling Organisational Learning (Ref. 8).

43 NNB GenCo might generate data for events arising from a number of sources including;

- a) Proactive safety tours, walks and inspections.
- b) Learning reports, which include good-practice and non-safety learning.
- c) Investigations of various types after incidents have occurred.
- d) Following an emergency.
- e) Observing non-compliances as a result of audits or inspections.

44 NNB GenCo has developed a suite of procedures and arrangements covering each of these areas. My assessment of their functions and the links between them, is covered in sections 4.1.2 and 4.1.3 of this report.

45 Later sub-sections deal with investigations and record-keeping, both important aspects for LC7.

4.1.1 Compliance Matrix

46 NNB GenCo tabled a compliance matrix (Ref. 7), showing revisions of procedures needed for each stage of the project at Hinkley Point C. ONR queried the absence of explicit review points for LC7 and OpEx. Instead, NNB GenCo has written a procedure that

requires all procedures to be reviewed at each phase of the project. NNB GenCo outlined other triggers that would cause an update of the procedures, including the following;

- An annual review of the procedure,
- A Learning Report relating to the procedure,
- Regulatory intervention by agreement
- An external or internal audit.

47 These arrangements were described by NNB GenCo as “self-maintaining” making explicit review points unnecessary.

48 ONR could also use its primary powers under LC7 to cause an update of Licensee procedures. NNB GenCo and ONR agreed that the primary powers in LC 7 1(b) and 2 implicitly called up their regulatory interface protocol which covers the NNB GenCo response to ONR primary powers, Ref. 16.

49 Providing that NNB GenCo arrangements were compliant with T/INS/07 at licensing, I concluded that NNB GenCo arrangements would remain compliant through changing phases of the project. The following section of my report covers the compliance thread.

4.1.2 Compliance ‘Thread’

50 ONR examined the “compliance thread” through the procedure for Organisational Learning, Ref. 8 and related documents such as Ref. 9, 10, 12 and 21.

51 There are many potential feeds to the organisational learning process and ONR sought additional clarity to ensure that cross-linked documents did explicitly trigger notifications when required. This area is described more in section 4.1.3 below.

52 For instance, documentation for the emergency response and emergency plans do reference back to the procedure for organisational learning. In this way, relevant learning could be obtained from an emergency. This aspect is covered in section 4.1.3 of my report. Nevertheless, there were minor inconsistencies in cross-referencing between different procedures that ONR discovered.

53 NNB GenCo responded by updating their documentation in Spring 2012 and ONR’s principal concerns were addressed. The three outstanding areas were; the retention of records, the status of the guide and the absence of phases in the compliance matrix.

54 NNB GenCo outlined their processes for handling mandatory evaluations (MEVL). MEVL feed the Organisational Learning procedure at step 1.5 of Ref. 8. ONR asked whether a written procedure existed to cover this. Whilst MEVL was not explicitly covered by the procedures, it is covered in guidance (Ref. 21) and there is a drop-down option for an MEVL in the OLIM database.

55 I examined the NNB GenCo procedure for notifying incidents and events to ONR, Ref. 9. This covers the latest version of ONR guidance, published on the HSE website in 2012. Areas relating to nuclear activities, not yet licensed at HPC, are present but currently greyed out. ONR is aware that NNB GenCo is reviewing the status of this document as a guide or a procedure.

56 Several documents that support NNB GenCo arrangements have the status of guides. This means that some quality-controls for records and retention were missing. ONR did sample several documents that were generated under the guidance and were nevertheless robust records. NNB GenCo is reviewing the status of some of these guides

and should advise ONR of the outcome of that review. I am content that NNB GenCo arrangements for LC7 are sufficiently compliant for this stage of the project.

4.1.3 Notification Triggers and Internally Generated OpEx

57 Early in the intervention, ONR raised an action on NNB GenCo to revise the flowchart in their procedure for Organisational Learning (Ref. 8) to highlight notification. ONR asked whether the notification process was sufficiently explicit and prompt when necessary. NNB GenCo outlined a number of procedures which also gave rise to Learning Reports (LR) and were just as likely to result in a notification. NNB GenCo then undertook a desktop review to confirm the feeding procedures were indeed fully developed.

58 Following this review, NNB GenCo confirmed that all procedures inputting to Ref. 8 were extant. There were a number of cross-references between these which was not always reflected in the first issue of these documents. As a number of NNB GenCo documents were updated by NNB GenCo as a result of ONR interventions, NNB GenCo took a transverse action to review cross-references in all their arrangements as part of their license application.

59 ONR found that NNB GenCo procedures for emergency response and environmental events did not reference notification requirements explicitly, but did reference procedures for Organisational Learning where notification would be triggered.

60 The responsibility of line managers at step 1.2 of the flowchart in Ref. 8 was clarified in the text. The line manager is responsible for ensuring that an officer, identified in Appendix B of Ref. 8, makes any statutory notifications. This will normally be a nominated Duty Officer for the site.

61 Activity 1.4 of the procedure refers NNB GenCo staff to categorize events following offsite reporting and notification guidance (Ref. 9) and the guidance specifies the notifications required by the licence condition.

62 ONR queried box 1.8 of the process flowchart in the procedure (Ref. 8), headed "Communicate Event Updates". ONR asked NNB GenCo whether the full variety of people were adequately represented, as it might include off-site and Regulatory reports. NNB GenCo provided Ref. 12 as evidence that learning reaches the relevant people.

63 NNB GenCo also confirmed that off-site safety alerts could be added to OLIM. An example of hazards from cable strikes off-site was given. This had been the subject of pro-active and preventative briefings to Kier-BAM, a contractor on the site.

64 On occasion HPC also needs to seek external OpEx to pre-brief staff and contractors before work enters a new phase, for instance before the introduction of concrete pumps. The NNB GenCo OL team tries to be pro-active, which is good.

4.1.4 Investigations

65 NNB GenCo provided a copy of their procedure covering investigations (Ref. 10). This gives a brief summary of the activities needed to identify root causes and corrective actions arising from an incident. It did not provide much guidance on the Terms of Reference (TOR) for investigations. NNB GenCo expected the TOR to be different each time and their development was being used as a training opportunity.

66 ONR noted that the NNB GenCo procedures ran straight from identifying the cause of an event to devising the correction without an intermediate review. NNB GenCo replied that "corrective actions" could include reviews or benchmarking. The Learning Report could place actions independently of the Investigation Report.

67 I was content that the procedure covering investigations is adequate for the types of work being conducted on site. The identification and training of investigators is covered in section 4.2.3 of this report.

4.1.5 Record-Keeping

68 Under LC6, a Licensee is expected to maintain appropriate records for a wide range of regulated activities. The requirements of LC6 clearly include the retention of records relating to incidents and accidents.

69 NNB GenCo confirmed that Learning Reports would be retained as records in accordance with Licence Condition 6. IT security was a specific topic addressed during the development of OLIM and NNB GenCo has accredited this database for retention of records and Ref. 15 was provided in evidence. This accredits OLIM to protect data in the immediate and mid-term future.

70 Other records relating to notifications and OpEx, including the HPC OpEx spreadsheet, would be stored in Business Collaborator. This is NNB GenCo's principal database for general record-keeping.

71 It was clear for the purposes of the LC7 intervention, that any records associated with LC7 were managed appropriately and would not disappear on a short timescale. ONR may review the longevity of records in OLIM during Q3/2012 or later.

4.2 Organisational Capability and Learning

72 In addition to examining the procedures that define NNB GenCo arrangements for LC7 and organisational learning, ONR also examined the capability of the organisation to support these activities, from the supporting personnel arrangements, through training to sampling some of the learning achieved from the conventional incidents and external OpEx to which NNB GenCo does have access.

4.2.1 Externally Generated OpEx

73 NNB GenCo staff all have access to EDF-Generations UK intranet website called Pulse, which presents updates and feedback from former British-Energy reactor sites including Sizewell B.

74 ONR had previously asked NNB GenCo to provide evidence of OpEx from relevant projects overseas; in France, Finland or China. NNB GenCo has responded by concluding an interface agreement in principle with the Centre National d'Equipment Nucléaire (CNEN), covering the exchange of OpEx between HPC and France. This protocol was recently agreed with CNEN in Paris for the exchange of operational experience information, Ref. 19. In this protocol, CNEN agrees to gather engineering OpEx for the whole EDF fleet centrally and distribute it to NNB GenCo and other parts of EDF, particularly where EPRs are being constructed.

75 The draft interface agreement (Ref. 19) requires EDF management in France to identify OpEx relevant to the UK and provide Operational Experience Reports to CNEN in Paris. CNEN will coordinate these and forward relevant OpEx to the NNB GenCo OpEx coordinator at the Qube. The OpEx covered will include; construction engineering, operations and purchasing. As yet, only a small number of items have been sent.

76 Once the agreement starts, CNEN will gather more OpEx from the whole EDF fleet and from NNB GenCo's architect-engineer and then distribute it to NNB GenCo and to other parts of the EDF. All OpEx will be reviewed by CNEN and necessary actions agreed before transmission to NNB GenCo. For its part, NNB GenCo will decide the actions to take on received OpEx and distribute it to its UK locations.

- 77 OL coordinators at the Qube will provide equivalent feedback from NNB GenCo to CNEN.
- 78 I was satisfied that NNB GenCo arrangements to capture external OpEx were adequate. The exercise of these arrangements may be inspected by the Nominated Site Inspector after licensing.

4.2.2 Database for OpEx

- 79 The key list of conventional events, used to coordinate activities and generate statistics at HPC, is the spreadsheet HPC-NNB-GEN-XX-000-REG-00001. This is maintained in the "Business-Collaborator" system for shared access by the Safety and Environmental Manager, his team, project-office staff and contractors. Since starting the spreadsheet on 23-Sep-2011, there have been 800 records added, about 90% of these relating to safety, roughly 5% to security and 5% to general QA / business efficiency. The spreadsheet will be run in parallel with OLIM as described later in my report.
- 80 To handle the more sophisticated demands of nuclear learning, NNB GenCo is in the process of implementing a new database called OLIM. NNB GenCo has presented this system to ONR by demonstrating the creation of a new learning record in OLIM over the course of two meetings in June 2012 (Ref. 6e and 6f).
- 81 Implementation of OLIM took longer than expected, because NNB GenCo had made a number of improvements to the basic software including, for instance, the facility for the user to configure extra event codes. The software is now being rolled out with NNB GenCo's computer intranet. Until June 2012, only staff at the Qube had received training in this package. However, an interactive e-learning module that was available on NNB GenCo's new internal network to train a wider range of users. Training is covered in section 4.3.1 of my report.
- 82 On HPC site, the first target is to get all users of the new NNB GenCo intranet trained in OL and using OLIM by the end of July 2012. HPC is currently planning the next stage, to get all contractors (who don't have all have regular access to the NNB GenCo intranet) trained.
- 83 The OLIM new software looked promising and ONR asked NNB GenCo which of the two systems, the spreadsheet or the database, would be claimed as implementing their arrangements. NNB GenCo confirmed that the principal system will henceforth be OLIM, with the spreadsheet being used as a backup for conventional events at HPC. ONR is content with the NNB GenCo position.

4.2.3 Learning Reports

- 84 NNB GenCo provided copies of their new guide to Learning Reports (Ref. 21) and the new work instruction on distributing Learning Briefs (Ref. 12). "Gate-Keepers" for the distribution of Learning Reports are identified in the latter.
- 85 NNB GenCo agreed with ONR that these documents should be visible in the list of references in their guidance, Ref. 9. Since a number of documents had recently been updated and approved, NNB GenCo is reviewing lists of references in all their procedures prior to licensing. This action will be carried forward generically outside of LC7
- 86 ONR sampled LRs from non-compliances, conventional site incidents, walkabouts and other sources. One good example covered the failure of a brake-pedal on a large dumper truck that was communicated to a number of major UK construction sites, Ref. 20. I also found that NNB GenCo also had categories and encouraged staff to include learning from environmental events.

87 These samples gave me confidence that NNB GenCo processes for distributing OpEx to a licensed site would be effective.

4.3 Organisational Capability

88 ONR examined draft organizational charts, including posts with responsibility for OL. On the basis that no further changes relating to OpEx were planned, ONR accepted the baseline for OpEx as presented by NNB GenCo. This will be confirmed with the next issue of the nuclear baseline due later in 2012.

89 Two sets of inspections were undertaken for this aspect of LC7, covering the dedicated OpEx specialists and wider staffing. ONR sampled role definitions, job profiles, training and competency reviews for the OpEx specialists, including investigators (Ref. 18). Other staff were effectively the generators and users of OpEx and ONR concentrated on training aspects.

90 I was also satisfied by NNB GenCo's own self-assessment of these processes in Ref. 22.

4.3.1 Training

91 Apart from specialist training in OpEx for root cause investigators and OL coordinators, NNB GenCo has plans in place to give all staff and contractors in NNB GenCo a fundamental appreciation of OpEx use. NNB GenCo will provide this as a part of the fundamental training that all staff and contractors receive when joining NNB GenCo.

92 NNB GenCo no longer provides training based using their 2012 programme and training packages. In 2012, NNB GenCo updated its Induction and e-Learning packages and began developing new packages for Foundation and Fundamentals training. Delivery of these new courses began in June 2012.

93 All staff employed by NNB GenCo, including embedded contractors, will undergo the new Induction and Foundation training. Nobody will be able to visit sites more than 14 times without induction training. This training provides a basic awareness of the openness and transparency needed for a learning organisational culture.

94 At the time of writing this report, NNB GenCo is in the process of providing the new interactive e-learning package covering OL to all users of the new intranet at HPC, with a target of HPC using OLIM by the end of July 2012. They are also planning the next stage, to get all contractors (who don't have all have regular access to the NNB GenCo intranet) trained in OpEx-related fundamentals.

95 Before June 2012, the only staff who had received more detailed OpEx training from EDF were based at the Qube. This training had been built for users of the OLIM package.

96 Likewise, up to now NNB GenCo has trained staff only at the Qube in investigation techniques. NNB GenCo does not intend to train an investigator in all of its functional units (Table 2) but does intend to maintain between two and five trained investigators on HPC site. ONR raised the identification of staff for training in investigative techniques. How training needs are identified for investigators, and who gets trained, is covered in section 4.3.2 below. NNB GenCo treats the Investigator as a role and not a post, and ONR is content with this.

97 Noting that the training of staff and contractors is an ongoing process, by its nature, I was satisfied that NNB GenCo is making good progress towards training all people in OpEx matters. Training is one of the topics that would be covered by the standard compliance inspection of a Licensed site.

4.3.2 Competency

- 98 In addition to procedures and technical systems, a Licensee needs enough competent staff to be able to operate their arrangements. I began my assessment of competencies by sampling the NNB GenCo nuclear baseline. Whilst NNB GenCo had not finalised its baseline at the time of writing this report, NNB GenCo had confirmed that the baseline posts supporting OpEx and notification were confirmed. Roles in the baseline that might be relevant to OpEx and LC7 included the coordination and management of OpEx and the OL champions in each of NNB GenCo's departments, see Table 2.
- 99 The role of the business manager at HPC is on the nuclear baseline and manages two work-streams related to OpEx;
- Organisational Learning
 - Nuclear Professionalism and Construction Excellence
- 100 During our intervention, NNB GenCo split the roles of OL Coordinator and OL Champion. The list of duties for the coordinator included;
- Ensure preliminary screenings undertaken.
 - Chair screening meeting itself.
 - Ensure close-out with champions.
 - Ensure off-site notifications undertaken.
 - General quality control of OpEx
- 101 ONR observed that off-site notification was a legal duty and NNB GenCo considered making these posts "Amber" in the baseline. In the end, Champions and OpEx coordinators did not appear on the baseline, but OL managers and OL specialists appear with "Red" roles.
- 102 NNB GenCo provided a pack containing the latest role profiles (Ref. 18) and ONR sampled the competency assessment for one member of NNB GenCo staff. ONR found the role profiles well-constructed and the sampled competency assessment was appropriate to that role.
- 103 The investigation procedure (Ref. 10) makes reference to "the list" of trained investigators. ONR asked if this should refer to the NNB GenCo Performance Management computer System (PMS) in Human Resources instead. ONR checked that the trained investigators were identified in the PMS and confirmed that several Investigators have indeed been trained, with more due for training.
- 104 I was content that NNB GenCo controls over the competency of OL staff are adequate at this stage of the project. during my intervention, I recommended that role-competencies be added to the scope of the next NNB GenCo self-assessment.

4.3.3 Screening Meetings

- 105 Separate screening meetings are held at HPC and at the Qube. Those at HPC focus on site safety and the prevention of accidents on site. Screening by HQ focuses on the prevention of future problems, by reviewing feedback from designers, purchasing, fabrication and external nuclear OpEx.
- 106 HPC currently holds screening meetings every other week, screening around 50 events. The screening meeting has written terms of reference and a quorum of 5. They are considering use of Smart-Boards and remote access.
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107 At the Qube, screening meetings take place weekly with a quorum of 15, these include Organisational Learning Champions and OL coordinators. OL staff at the project office were already able to analyse trends in incident data. However, new systems would be needed to improve feedback to the originators of learning reports. This was an area for which new software and staff were being obtained.

108 Arrangements for screening were more than adequate for the types of hazard that would be on the site for some time to come.

4.4 Comparison with Standards, Guidance and Relevant Good Practice

109 The principal international standard covering OpEx and notification is contained in Ref. 5. This IAEA standard describes good practice for screening, investigation, corrective actions, trending, review, QA and reporting. NNB GenCo arrangements are compatible with this standard, insofar as is possible at this stage of the project.

110 Ref. 7a provides guidance to ONR Inspectors on how to conduct an inspection against LC7. Whilst it is not a standard for use by Licensees, my inspection sampled most areas recommended by this guide. The NNB GenCo arrangements for LC7 that I have sampled appear adequate for this stage of the project, when examined in accordance with Ref. 7a.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

111 ONR has examined the arrangements made by NNB GenCo for compliance with LC7 and provisions made for Organisational Learning. ONR finds that they comply with ONR standards so far as they could at this stage and that provisions for updating them as the project develops appeared robust.

112 NNB GenCo has made good progress in appointing and training staff to support its learning organisation and these are sufficient to handle conventional (non-nuclear) OpEx. They will need to increase levels of nuclear experience as the project develops.

113 Whilst there are currently no nuclear activities on the unlicensed site at Hinkley Point C, NNB GenCo is carrying out major earth-works and infra-structure development there. ONR inspected their arrangements for notifying, investigating and learning from conventional (i.e. non-nuclear) incidents and accidents on and off the site.

114 It is also good-practice for all ONR's Licensees to obtain and review nuclear OpEx from other nuclear operators in the UK and abroad. ONR reviewed documentation and sampled learning from actual incidents and non-compliances, through a series of inspections in NNB GenCo headquarters and at site.

115 To conclude, I am broadly satisfied with the claims, arguments and evidence provided by NNB GenCo in support of LC 7 and Organisational Learning at this stage of the project.

5.2 Recommendations

116 As far as LC7 is concerned, my recommendations are as follows;

- That a Nuclear Site Licence should be granted to NNB GenCo to install and operate a nuclear installation at its site located at Hinkley Point C
- That NNB GenCo's procedures (arrangements) for LC7 compliance and their implementation are inspected by Hinkley Point C's nominated site inspector during future phases of the project to ensure that nuclear OpEx is incorporated as it becomes available

6 REFERENCES

- 1 *ONR How2 Business Management System. Assessment Process.* PI/FWD, HSE April 2010. www.hse.gov.uk/nuclear/operational/assessment/index.htm.
- 2 *Safety Assessment Principles for Nuclear Facilities.* 2006 Edition Revision 1. HSE. January 2008. www.hse.gov.uk/nuclear/SAP/SAP2006.pdf.
- 3 a) *"Incidents on the Site" and Other Reporting and OE Processes.* T/INS/07, HSE, Nov 2010 (unpublished); How2 - Diagram - Library Documents - Cornerstones, Master 1.
b) *Guidance for Notifying and Reporting Incidents to ONR.* G/INS/07, HSE, April 2012; <http://www.hse.gov.uk/nuclear/operational/inspection/index.htm>
- 4 *Intervention Strategy Report – ONR New Build Licensing* TRIM 2012/61973
- 5 *A System for the Feedback of Experience from Events in Nuclear Installations.* International Atomic Energy Agency (IAEA). Safety Guide No. NS-G-2.11. IAEA. Vienna. 2006. www.iaea.org.
- 6 ONR Intervention Reports;
 - a) 2011/84285 – IR11009 – LC7 Meeting at the Qube – 19 January 2011
 - b) 2012/107252 - IR12251 - LC7 Inspection at Hinkley Point C - 26 January 2012
 - c) 2012/204671 - IR12050 - LC7 Inspection at Hinkley Point C - 21 March 2012
 - d) 2012/204790 - IR12076 - LC7 Inspection at Hinkley Point C - 13 April 2012
 - e) 2012/277921 - IR12149 - LC7 Meeting at the Qube - 07 June 2012
 - f) 2012/304679 - IR12124 - LC7 - 21 June 2012
- 7 a) NNB-OSL-PRO-0046 Nuclear Site Licence Compliance Matrix TRIM 2012/314971
b) NNB-OSL-PRG-0038 NSL FWP Schedule Project Gantt chart TRIM 2012/358733
- 8 NNB-OSL-PRO-0014 Procedure: Enable Organisational Learning TRIM 2012/351522
- 9 NNB-OSL-GUI-00026 Event Categorisation, Offsite Reporting and Notification TRIM 2012/358730
- 10 NNB-OSL-PRO-0079 Procedure: Investigate Incidents TRIM 2012/358738
- 11 NNB-PCP-NCR-00006 Report of Non-Conformance in Procurement TRIM 2012/335553
- 12 NNB-OSL-WIN-00001 Instruction: Communicating Learning Briefs TRIM 2012/335554
- 13 NNB-OSL-PAP0000204 Sample board report TRIM 2012/335556
- 14 Sample safety review report to NNB GenCo directors TRIM 2012/335559
- 15 NNB GenCo e-mail confirming status of OLIM for record-keeping TRIM 2012/351548
- 16 NNB-OSL-PRO-000061 Procedure to Manage the Regulatory Interface TRIM 2012/358746
- 17 NNB-OSL-PLN-006006 Forward Work Plan for HPC Nuclear Site Licence Application TRIM 2012/358734
- 18 NNB-OSL-TPR-0132 Profile and Competency for Investigator Role TRIM 2012/318722
NNB-OSL-TPR-0133 Profile and Competency for Champions TRIM 2012/318
NNB-OSL-TPR-0134 Profile and Competency for OL Coordinator TRIM 2012/318728
NNB-OSL-TRP-0118 Profile and Competency for OL Specialist TRIM 2012/318731
- 19 INS-UKEPR-351 UK EPR Management of Operating, Engineering and Construction Experience TRIM 2012/351668
- 20 LR-2011-11-29 Serious Near Miss – brake failure of dump truck TRIM 2012/351552
- 21 NNB-OSL-GUI-00179 v2.0 Guidance: Raising, Screening and Processing Organisational Learning LR's. TRIM 2012/351669
- 22 NNB-OSL-ASS-0038 Process Self-Assessment - TRIM 2012/351673

Table 1

Relevant Safety Assessment Principles Considered During the Assessment

SAP No.	SAP Title	Description
MS.4	Learning from experience	Lessons should be learned from internal and external sources to continually improve leadership, organisational capability, safety decision making and safety performance

Table 2

Functions with Organisational Learning Champions

Description
Facilities Finance- Business Architecture Finance- Land Programme Finance- IT HPC Project- Construction Engineering *HPC Project- Design Authority HPC Project- Document Management HPC Project- Environment *HPC Project- Manufacturing Inspection HPC Project- Nuclear Site Licensing HPC Project- Procurement HPC Project- Project Controls HPC Project- Security HR- Communications HR- Operations HR- Organisational & Talent Development Pre-Ops- Operational Development *Pre-Ops- Training Planning & External Affairs *Safety- Assurance Safety- Business Continuity *Safety- Industrial Safety Safety- Nuclear Professionalism

* Interviewed as part of this intervention

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