Health and Safety Executive

Training Provisions

Main Document BSS/HRM/030

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Content of Training Provisions

1 The need for the courses, on-job training, tutorials and other provisions specified in the training programmes in Training and Development Requirements has been identified from a training needs analysis of the relevant job function. The content of the training provision therefore has to match the development of the related competences and should be developed in a systematic way. Those who are responsible for the development and delivery of training provisions, for example course and tutorial leaders and contributors, should be guided by the outline content given in the prospectus.*

2 To reflect ND's commitment to be a 'learning organisation' each course, in addition to the content derived from the training needs analysis is expected to have a section devoted to 'operational experience feedback' (OEF). Course leaders should use this to identify learning material generated by lessons learned type exercises, feedback from surveys, recent internal initiatives etc.

3 Associated with OEF is the potential benefit of case study material for learning purposes. Selected case studies and relevant learning points to be provided in issue 2 of this document.

Training Provision:

ND Induction Course

Aim

To help new staff start their career with the Nuclear Directorate by welcoming them to their role in ND's work.

Course and learning objectives

Course objective:

1 Explain how ND carries out its part of the major hazards programme within the HSC/E strategy

Learning objectives:

1.1 Identify the key elements of the HSC/E strategy and the way in which it is delivered.

1.2 Recognise the way in which ND's work contributes to the major hazards programme.

Course objective:

2 Introduce the key features of the UK nuclear industry and the way in which it is regulated.

Learning objectives:

2.1 Recognise the hazards and risks associated with the UK nuclear industry and why they need to be closely regulated.

2.2 Explain the role of Inspectors and administrative staff in ensuring that ND regulation is effective and efficient.

2.3 Recognise OCSN and Safeguards roles.

Course objective:

3 Understand the importance of HSE core values in effective regulation.

Learning objectives:

3.1 Convert HSE core values to everyday applications.

3.2 Analyse case studies to determine the relevance of key behaviours.

3.3 Explain the working environment that ND is seeking to secure.

Course objective:

4 Understand the way in which ND approaches the control of risks to its own staff.

Learning objectives:

4.1 Analyse the risks faced by ND staff.

4.2 Explain ND's risk management arrangements.

Course objective:

5 Introduce the key administrative practices important to effective regulation.

Learning objectives:

5.1 Explain how to achieve the right capabilities in the operation of HSE IT systems and why it is important to do this: COIN, eHR, EDRM, BMS.

5.2 Explain HSE sickness absence management arrangements.

5.3 Explain security and Freedom of Information requirements.

TNA reference
NA – part of the induction process.

OEF to be covered
IRRS report.

Duration
One day.

Effective Regulation Course

Aim

To provide ND Inspectors with an understanding of the working practices and behaviours that are likely to lead the most effective discharge of statutory duties.

Course and Learning Objectives

Course objective:

1 Understand what constitutes regulatory effectiveness.

Learning objectives:

1.1 Develop and consider different models of regulatory effectiveness.

1.2 Identify elements most applicable to current NII context.

1.3 Establish the role of the individual in relevant models.

Course objective:

2 Introduce ND business processes that are important to the delivery of effective regulation.

Learning objectives:

2.1 Formulate inputs to the ND regulatory review process.

2.2 Be able to explain the leverage model.

2.3 Develop outline interventions based on ND planning expectations and priorities and the HSE Enforcement Policy Statement.

2.4 Recognise management imperatives relating to effectiveness.

Course objective:

3 Identify factors that could lead to less effective regulation, from practical experience.

Learning objectives:

3.1 Explain the nature of the regulatory dialogue that is likely to be most effective (Vectra feedback).

3.2 Draw out key points from recent feedback case studies.

3.3 Recognise licencee perceptions of NII regulation and how these have to be taken into account.

Course objective:

4 Identify the people and organisational skills that are needed for effective influencing capabilities.

Learning objectives:

4.1 Identify the HSE core competencies that are most important for effective regulatory intervention.

4.2 Recognise the rights and interests of individuals within duty-holder organisations.

4.3 Recognise the role of a good safety culture and adequate safety management.

Course objective:

5 Understand the importance of ensuring that proposed action has a sound legal underpinning.

Learning objectives:

5.1 Translate legal basis for regulation into everyday activity in both the permissioning and compliance key business activities.

5.2 Explain how the nuclear licensing framework is used to secure effective nuclear safety management.

5.3 Plan an intervention to bring a specified issue to a satisfactory conclusion and explain the role of the discretionary system of regulation in doing so.

TNA Reference

Table 2.2 (nuclear inspection) and 2.4 (permissioning inspection).

OEF to be covered

THORP lessons learned (NIW 93/12Pt1 E20)
Vectra survey (CALM paper 05-2006)
D154 NAO report and NII response
ICL event (Glasgow)

Duration

Estimated at one and a half days.

Nuclear Safety Course

Aim

To ensure that all Nuclear Inspectors have or develop a common baseline understanding of nuclear and radiological hazards and the way in which their control under normal, fault and emergency conditions is expected to be demonstrated in the safety case.

Course and learning objectives

Course objective:

1 Introduce sufficient outline knowledge of nuclear physics to enable Inspectors to understand the nature of nuclear and radiological hazards.

Learning objective:

1.1 Identify physical processes needed to sustain nuclear fission process.

1.2 Describe the characteristics and characterisation of the different forms of radio-activity.

1.3 Explain the characteristics of commonly encountered radio-isotopes.

Course objective:

2 Introduce the principles of radiation protection.

Learning objective:

2.1 Recognize that exposure to ionising radiations is considered in a stochastic and a deterministic sense.

2.2 Describe in outline the principles for protection against ionising radiation.

2.3 Describe in outline the practices used to protect individuals from occupational exposure.

Course objective:

3 Outline the process for matching engineered and other safeguards to the nature of the nuclear/radio-logical hazards in normal and fault conditions.

Learning objectives:

3.1 Explain how the sufficiency of engineered provisions is determined from a knowledge of risks and unmitigated consequences.

3.2 Describe the importance of a proper understanding of the behaviour of radio-active material under fault, abnormal and emergency conditions to the identification of safety functional requirements and defence in depth provisions.

3.3 Recognise factors that determine the extent of a release following an accident and measures associated with its mitigation.

Course objective:

4 Understand the principle hazards and risks associated with the main types of UK nuclear facility.

Learning objectives:

4.1 Describe the hazards associated with major UK licensed sites.

4.2 Investigate how to form a balanced view of risks in a facility.

Course objective:

5 Introduce the way in which a safety case should demonstrate safety.

Learning objectives:

5.1 Explain what expectations of a deterministic safety case.

5.2 Recognise the elements and characteristics of a probabilistic safety assessment.

5.3 Explain ND's approach to the development of ALARP cases.

TNA reference
Table 2.2 (nuclear inspection).

OEF to be covered
Nil.

Duration
Estimated at one and a half to two days.

Nuclear Industry Acquaint Course

Aim

To ensure that all Nuclear Inspectors have or develop a common baseline understanding of the UK nuclear industry and the way in which it is managed.

Course and learning objectives

Course objective:

1 Understand the nuclear fuel cycle, its principle components and interactions.

Learning objectives:

1.1 Explain the key elements of the civil nuclear power programme and how they link together.

1.2 Explain the characteristics of the hazards associated with each stage of the nuclear fuel cycle.

1.3 Explain the function and characteristics of key and representative plant in the UK nuclear industry.

Course objective:

2 Introduce the way in which the principle duty-holders within the nuclear industry are structured to manage nuclear safety.

Learning objectives:

2.1 Translate ND safety management expectations (in SAPs and 'The Licensing of Nuclear Installations') into practical applications.

2.2 Identify the managerial and organisational elements within licensee organisations that are most important for nuclear safety.

2.3 Identify and compare the major nuclear licensees.

2.4 Recognise the roles played by non-licensee organisations in the nuclear industry (e.g. design houses, consultancies, third party organisations, training providers).

Course objective:

3 Introduce the role of organisations in the political and wider domain who have an interest in nuclear safety.

Learning objectives:

3.1 Explain the relationship between the Chief Inspector of Nuclear Installations and responsible Ministers.

3.2 Identify the role of other regulators.

3.3 Identify other organisations that have most influence over nuclear safety, domestic and overseas.

Course objective:

4 Understand the role of the nuclear safety case.

Learning objectives:

4.1 Explain how the safety case should lead to the definition of a safe operating envelope.

4.2 Analyse ND's experience in the use of nuclear safety cases by licensees.

Course objective:

5 Understand the way in which the NII has adapted and developed to meet changes in the nuclear industry, and potential future influences.

Learning objectives:

5.1 Analyse the way in which the NII has developed over the last twenty years and the influences that have led to that development.

TNA reference

Table 2.2 (nuclear inspection).

OEF to be covered

Feedback from top-level stakeholder meeting NII/nuclear industry June 2004.

Duration

One day.

Safety Assessment Course

Aim

To introduce guidance on ND's approach to permissioning inspection to help new Inspectors become effective in the safety case assessment function.

Course and learning objectives

Course objective:

1 Understand the legal basis for ND assessment activity.

Learning objectives:

1.1 Explain the legal obligations on licensees when NII Inspectors raise concerns about aspects of safety cases.

1.2 Understand legal requirements for safety cases set out in LC 14 and LC23.

1.3 Explain what the NII expects in an 'adequate' safety case.

1.4 Understand the role of SAPs and TAGs and their relationship with the IAEA framework.

Course objective:

2 Understand how a safety case links hazards to the safe operating envelope that is intended to ensure that hazards are kept under control.

Learning objectives:

2.1 Explain how safety functional requirements are derived from a knowledge of hazards and activities.

2.2 Understand the relationship between risks/consequences and sufficiency of safety systems and defence-in-depth provisions.

2.3 Explain fault tolerance and defence-in-depth concepts.

2.4 Understand the relationship between deterministic and probabilistic safety cases.

2.5 Recognise a sound ALARP demonstration.

Course objective:

3 Introduce the business systems that are in place to secure effective assessment activity.

Learning objectives:

3.1 Explain the permissioning key business activity and how it links to HSC/E permissioning policy and ND practice.

3.2 Introduce the role of elements of the BMS in assessment.

3.3 Recognise the importance of controlling the NII/licensee interaction for effective assessment.

3.4 Develop working practices that can avoid unbalanced or disproportionate assessment.

TNA reference

Table 2.2 (nuclear inspection) and 2.4 (permissioning inspection).

OEF to be covered

Lessons leaned from Division 3 permissioning project May 2007 (balance assessment).

Duration

Estimated two days.

Site Inspection for Assessors Course

Aim

To provide Inspectors in assessment Units with sufficient understanding of the duties and responsibilities associated with inspection to help develop the ability to undertake it themselves (a secondary aim is to provide an opportunity to help decide whether site inspection is likely to be an attractive career move).

Course and learning objectives

Course objective:

1 Understand the legal basis for inspection and the role of the correct exercise of discretion in its execution.

Learning objectives:

1.1 Explain the legal powers by which Inspectors can carry out site/compliance inspection.

1.2 Relate the legal requirement for the correct exercise of discretion to its practical application during inspection activity.

1.3 Explain how permissioning practice relates to the nuclear licensing framework.

Course objectives:

2 Understand how to influence licensees.

Learning objectives:

2.1 Explain the benefits and limitations of compliance inspection.

2.2 Identify different influencing strategies from the leverage model and the associated interpersonal skills.

2.3 Explain the benefits and characteristics of a team and integrated approach to regulation.

Course objectives:

3 Identify the need for and carry out remedial action.

Learning objectives:

3.1 Describe the sort of event that warrants formal action.

3.2 Apply the Enforcement Management Model (EMM) to case study.

3.3 Establish approach to development of sufficient plant understanding.

Course objective:

4 Understand how to deal with unexpected events on site.

Learning objectives:

4.1 Take the right action if a reportable event occurs on site.

4.2 Carry out the correct NII site action in response to a site emergency.

4.3 Respond correctly if an NII investigation is necessary.

4.4 Develop a media ‘survival suit’.

TNA reference
Table 2.4 (permissioning inspection).

OEF to be covered
THORP ‘Lessons leaned’ report, 2007.

Duration
Estimated 2 days.

Site Inspection Course

Aim

To introduce guidance on ND's approach to compliance inspection to help Inspectors allocated to site inspection duties to become effective in that role.

Course and learning objectives

Course objective:

1 Understand the statutory duties relating to site inspection and the relationship between the legal framework and everyday activity.

Learning objectives:

1.1 Agree the role of site inspectors.

1.2 Explain the link between nuclear safety, routine compliance and permissioning inspection and the HASAWA.

1.3 Identify statutory regulations with which site inspectors should be familiar, and their purpose.

1.4 Establish the importance of the correct exercise of discretion to effective regulation.

Course objective:

2 Gain an initial understanding of the ND management arrangements in place to secure effective regulation.

Learning objectives:

2.1 Establish the elements that constitute integrated intervention strategies and the routine in-year processes that underpin their delivery.

2.2 Explain how the priorities for the various elements of integrated intervention strategy are established.

2.3 Link site inspection activity to the HSC/E enforcement policy statement and permissioning policy statement.

Course objective:

3 Introduce the leverage model and the ND approach to influencing.

Learning objectives:

3.1 Explain the importance of an open and effective dialogue with duty-holders and the need to understand duty-holders' interests.

3.2 Use the leverage model to develop different intervention strategies.

3.3 Identify key stakeholders and how Inspectors can work with them to achieve objectives.

3.4 Establish HSE core skills most relevant to influencing capabilities.

3.5 Explain how to be an effective Inspector.

Course objective:

4 Understand the role of compliance inspection.

Learning objectives:

4.1 Prepare a notional annual inspection plan.

4.2 Explain the purpose of compliance inspection within that plan.

4.3 Prepare an inspection report (scope only, including follow-up activity).

4.4 Identify potential sources of information and techniques for obtaining it.

Course objective:

5 Understand ND permissioning processes.

Learning objectives:

5.1 Explain the use of licence instruments in relation to primary and derived powers.

5.2 Scope out the assessment requirements for a category 1 LC22 submission.

5.3 Explain how a safety case establishes the safe operating envelope.

5.4 Explain how to ensure balanced assessment and to resolve differences of professional opinion.

Course objective:

6 Understand how to deal with unexpected events.

Learning objectives:

6.1 Raise a FAST 1 and explain how it is processed.

6.2 Establish the various roles that Inspectors may be called upon to play in ND’s emergency preparedness arrangements.

6.3 Classify an event on the INES scale.

6.4 Use the EMM to determine regulatory response to an event.

6.5 Understand OPIP procedures related to notices and investigations, in particular protocols for evidence handling.

6.6 Develop a secure approach to dealing with the media/public.

NB: 'conventional' safety is covered by the Conventional Safety Workshop, which should be attended by all Site Inspectors.

Course objective:

7 Understand the importance of correct management of the site overhead.

Learning objectives:

7.1 Set up annual review and start up meetings.

7.2 Develop content for LCLC report and brief.

7.3 Explain factors relevant to judging emergency exercises.

7.4 Sentence land use planning and licensing applications.

TNA reference

Table 2.6 (compliance inspection).

OEF to be covered

THORP 'Lessons leaned' report, 2007.
Division 1 PAR xx/05.
ICL event (Glasgow).

Duration

Estimated three days.

Tutorial 1: Purpose of ND Assessment

AIM: To gain sufficient understanding of preferred NSD working practices to enable new Nuclear Inspectors carrying out primarily assessment work to understand their role, duties, responsibilities and accountabilities to enable them to carry out their work without business risk to ND.

OBJECTIVES:

A Develop an agreed view of duties, responsibilities, authority and accountability.

B Identify factors that can prevent effective exercise of items at (A).

C Develop an understanding of how the role of assessment fits into integrated intervention generally.

AREAS TO BE COVERED	TNA REFERENCE
Who has what responsibility for safety.	BSS/HRM/030 - Functional Job Descriptions and Training Needs Analyses - Table 2.3 and 2.4
NII Inspectors are expected to be able to carry out a range of duties on appointment, not just specialist work.	
Everything Inspectors do should have a sound legal underpinning.	
'Enforcement' is defined in very broad terms and, at its softer end, includes advising, guiding and influencing duty-holders.	
Band 3 Inspectors' formal authority is defined through their warrant, they have no other formally stated authority, unlike Band 2 Inspectors.	
There is no distinction in terms of formal authority between compliance inspectors and permissioning inspectors.	

DATE OF LAST TUTORIAL: 20 December 2006

KEY POINTS FROM TUTORIAL EVALUATION AND SUBSEQUENT OEF:

- The recruitment process into high hazard areas can give newly recruited Inspectors the impression that their sole role is to provide technical advice.
- The meaning of 'enforcement' appears not to be generally understood.
- The role and authority of compliance inspectors (site inspector) is not well understood.

Tutorial 2: Effective Assessment

AIM: To help develop assessment working practices that lead to a proportionate and consistent approach to effective regulation.

OBJECTIVES:

A Develop a consensus on the purpose of assessment.

B Establish how the linking of assessment activity to regulatory and enforcement (in widest sense) duties conditions its effectiveness.

C Explore most applicable core competencies.

AREAS TO BE COVERED	TNA REFERENCE
Responsibility of assessors and reason for assessment.	BSS/HRM/030 - Functional Job Descriptions and Training Needs Analyses - Table 2.3 and 2.4
Sampling and discretion – when is enough enough?	
How to optimise timing and what to do if licensee will not co-operate or budge.	
Depth of assessment versus time available.	
Targeting, and balancing discipline interests.	
Feedback from licensees.	

DATE OF LAST TUTORIAL: 2 May 2007

KEY POINTS FROM TUTORIAL EVALUATION AND SUBSEQUENT OEF:

- A clear understanding of the legal basis for assessment activity provides a useful discipline for its conduct.
- A collegiate approach to regulatory intervention, including assessment, offers many advantages.
- An open and effective (and early) dialogue promotes regulatory consistency.
- Safety cases may hide or omit difficult issues, hence the need to develop an objective view of safety issues and the importance of verification.

Tutorial 3: Assessment Difficulties

AIM: Identify potential solutions to difficulties that are most commonly experienced in assessment.

OBJECTIVES:

A Highlight common difficulties in assessment.

B Identify the cause associated with each of any common difficulties.

C Explore possibilities for realistic near-term solutions.

AREAS TO BE COVERED	TNA REFERENCE
Sampling versus licensee self-regulation.	BSS/HRM/030 - Functional Job Descriptions and Training Needs Analyses - Table 2.3 and 2.4
The benefit of better ND cross discipline understanding.	
The need for a consistent national UK view of safety case expectation.	
Whether internal arrangements can be improved.	

DATE OF LAST TUTORIAL: 13 August 2007

KEY POINTS FROM TUTORIAL EVALUATION AND SUBSEQUENT OEF:

- Efforts to develop an effective working relationship with the licensee will pay dividends.
- It will similarly be useful to work with the site inspector.
- Tapping into other similar assessments can help consistency of approach, and NTGs should be able to help here.
- It will help provide thinking ‘space’ and avoid time pressure if the need for relevant references is identified early.
- Use of licensees’ own assessment/ITA/INSA/peer review process can be a more effective use of scarce ND time and effort.