

# Guidelines for inspections of offshore installations

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## **Abstract**

Discussions with Member States' representatives at the European Union Offshore Authorities Group (EUOAG) have identified the need for sharing good practise concerning Competent Authority inspections to ensure better consistency of approaches.

The European Commission's Joint Research Centre (JRC) has therefore developed these guidelines for Competent Authority inspections of offshore installations, based on its experience of undertaking advisory support for a number of Competent Authorities on inspection-related issues and the training course which it ran for Competent Authorities – in collaboration with the Croatian Hydrocarbon Agency (CHA) – in November 2017 in Zagreb-Pula, Croatia.

This guidance document is primarily aimed at those Member States with less mature offshore industries and inspection procedures, and should provide a common understanding about Competent Authority inspection responsibilities.

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# 1 Introduction

The blowout on the Deepwater Horizon drilling rig on April 20<sup>th</sup> 2010, whilst drilling the Macondo well in the Gulf of Mexico, significantly raised worldwide awareness of the risks involved in offshore oil & gas operations. In addition to the tragic loss of eleven lives, the blowout released nearly five million barrels of oil into the waters of the Gulf, and is considered to be the world's largest accidental oil spill from offshore operations.

In order to ensure a high level of safety in the European offshore oil & gas industry, the European Parliament and Council subsequently published Directive 2013/30/EU on safety of offshore oil and gas operations (OSD), amending Directive 2004/35/EC, obliging Member States to introduce implementing legislation covering wide-ranging requirements for safety and environmental protection during offshore oil & gas operations. One of the key obligations was the creation of national Competent Authorities to regulate such aspects for offshore oil & gas installations in their waters.

Under the Directive, a fundamental role of a Competent Authority (CA) is to oversee compliance by operators and owners, including by inspections, investigations and enforcement actions.

Discussions with Member States' representatives at the European Union Offshore Authorities Group (EUOAG) have identified the need for sharing good practise concerning Competent Authorities' inspections to ensure better consistency of approaches.

The Joint Research Centre (JRC) has therefore developed these guidelines for Competent Authority inspections<sup>1</sup> of offshore installations, based on its experience of undertaking advisory support for a number of Competent Authorities on inspection-related issues and the training course which it ran for Competent Authorities in Zagreb-Pula, Croatia in November 2017.

The guidance is primarily aimed at those EUOAG Member States with less mature offshore industries and inspection procedures, and should provide a common understanding about Competent Authority's inspection responsibilities.

The present guidelines are structured in the following sections:-

- The requirements of Directive 2013/30/EU in relation to CA inspections;
- The purpose of CA inspections;
- The differences between CA inspections and Independent Verification;
- The content of an inspection, as part of CA Annual Plans for effective oversight;
- Planning CA inspections;
- Practical advice on how to conduct a CA inspection;
- Post-inspection activities;
- Enforcement considerations;
- Competency requirements for CA Inspectors;
- Different styles of CA inspections;
- Various annexes providing suggestions for inspection plans' content and template, format of inspection reports, and the main characteristics that a good inspector must have.

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<sup>1</sup> Sometimes, the term "audit" is used rather than "inspection" to describe this type of activity by a Competent Authority. However, the two terms are virtually synonymous, although with audit possibly indicating a more structured approach. However, for simplicity, this document uses the term "inspection" throughout.

## 2 The OSD requirements for CA inspections

The requirements for CA inspection activities are defined in various Articles of the OSD:-

- Article 8 describes the range of functions which fall under CAs responsibility, and these include “overseeing compliance by operators and owners with this Directive, including **inspections**, investigations and enforcement actions” – as per Article 8(1)(b);
- Article 9(c) then requires CAs to establish policies, process and procedures for overseeing compliance “including **inspection**, investigation and enforcement actions”;
- Annex III (2)(1)(b) expands the requirement of Article 9(c) by demanding CAs to prepare “operating procedures that describe how it will **inspect** and enforce the execution of the duties of operators and owners under this Directive [...].and how the intervals between **inspection of major hazard risk control measures**, including to the environment, for a given installation or activity are to be determined”;
- Article 21(3), under the general section on securing compliance with the regulatory framework for major accident prevention, also requires Member States to ensure that their CAs develop “*annual plans for effective oversight, including **inspections**, of major hazards [...] with particular regard to compliance with the report on major hazards [...]*”;

### 3 The purpose of CA inspections

Interestingly, the OSD does not give any definition of what is actually meant by a Competent Authority "*inspection*", nor for the associated CA activities of investigation and enforcement.

However, the OSD clearly envisages that the purpose of such inspections is to enable CAs to have effective oversight of operators and owners working in their waters, overseeing/securing compliance with the major hazard aspects of the Directive.

Prescriptive requirements for compliance activities, such as the periodicity, scope and depth of inspections, are not included in the Directive and are therefore left to each Member State's CA to decide. However, these guidelines build on existing practises and approaches from EUOAG members.

One way to consider the purpose of an offshore CA's compliance activity – i.e. its "effective oversight" – is in the context of national stakeholders' expectations:

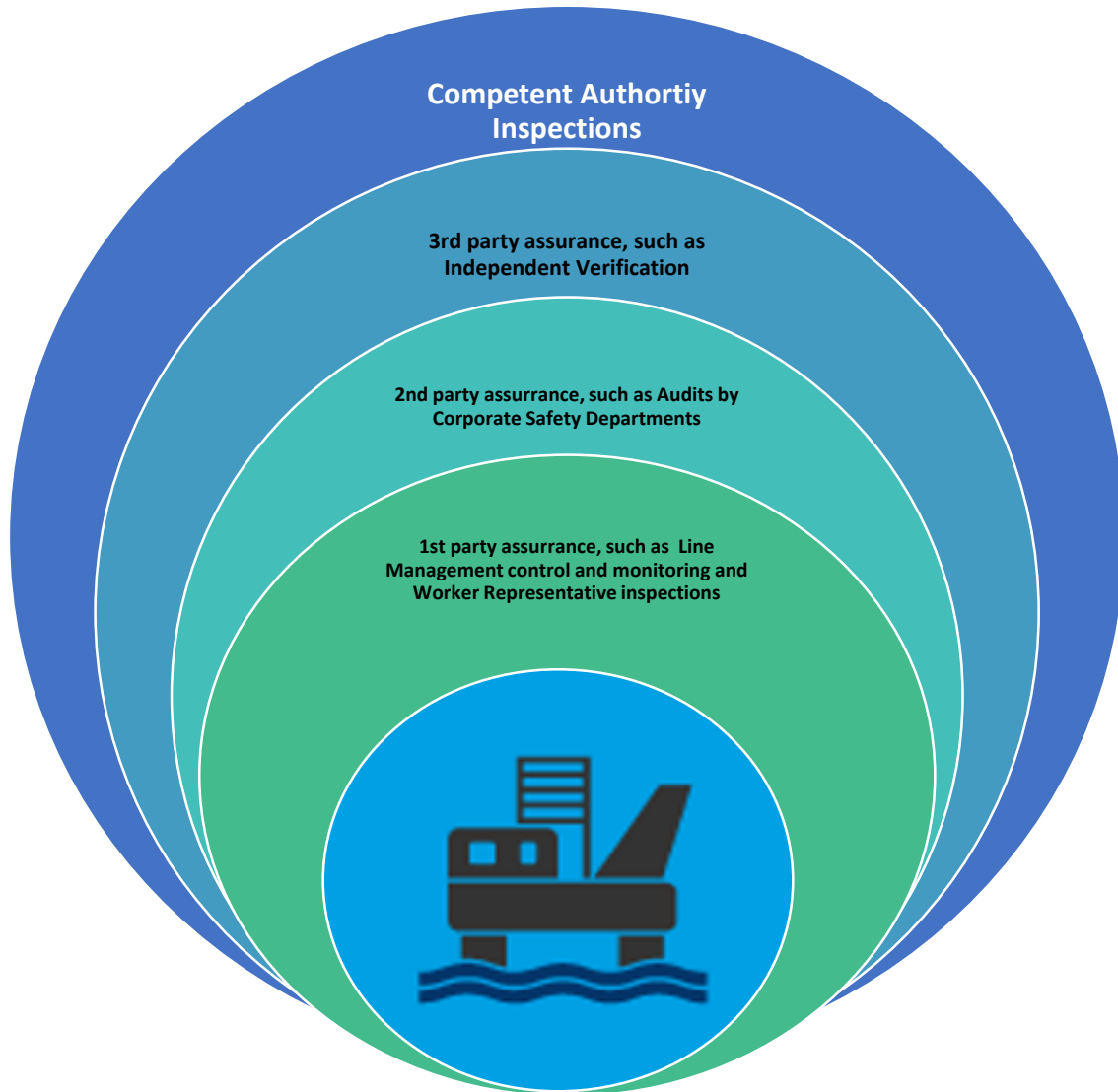
- Ministers and other politicians will be aware of the potential national consequences should offshore oil & gas activities go wrong, in economic terms (for instance damage to tourism and fishing, disruption in energy supply, etc.), financial terms (loss of revenues from oil/gas production, and possible state liabilities) and in damage to national and/or Governmental reputation. They will expect a transparent demonstration that their national regulator is complying with EU requirements, and that legislative compliance is achieved by operators and owners working within their national waters. Ministers with specific responsibility for offshore industry and environmental/safety matters will particularly expect reassurance that their CA has an active and effective oversight regime, with effective "policing" of such potentially hazardous activities.
- Citizens, press, and NGOs will similarly want reassurance that such an industry in their waters will not affect their own businesses, environment and quality of life, nor jeopardise the safety of any family members who work in the industry. Despite the emphasis in the Directive on "administrative controls" via acceptance and scrutiny of documentary evidence such as RoMHs, experience has shown that there will inevitably be an element of cynicism by the public for such activities, and a continuing demand for physical checks of legal compliance by the CA, who act as the public guardians.
- Offshore workers will want assurance that their working conditions will be safe and healthy, comply with national laws, and that CA's actions are effective enough to dissuade unscrupulous operators and owners from cutting corners. They will want to be convinced that the regulator will respond when they have complaints regarding sub-standard conditions. When serious incidents occur, they will want the regulator to investigate and ensure that any lessons are learnt and implemented. Lastly, when there are significant breaches of legislation and safety/environmental standards, they will expect the regulator to intervene and take appropriate action, including enforcement.
- The offshore industry will want a fair and consistent system of oversight by the Competent Authority for all companies operating in that Member State's waters, with a "level playing field" of compliance with national legislation. As the offshore industry operates across national boundaries, issues of consistency will also apply to the level and type of oversight which they experience when working in the waters of the different EUOAG Member States.



## 4 The differences between CA inspection and independent verification

Major hazard industries, such as offshore oil & gas, often have sophisticated systems to ensure the control of risk, with different levels/layers of monitoring and assessment.

A model for those interlocking systems is given in Figure 1.



**Figure 1 Monitoring and assessment systems in the offshore oil & gas sector**

The first three systems of assurance are all parts of how operators and owners deliver their responsibilities for ensuring effective control of the major hazard risks on their installations.

The initial level can be termed **1<sup>st</sup> party assurance**, as it includes the range of activities done on a day-to-day basis by those closest to the risk, such as normal line management control and monitoring activities and worker representative's inspections. The purpose of this 1<sup>st</sup> party assurance is principally to anticipate, identify, manage and rectify any immediate issues of risk management concerns.

The next level, **2<sup>nd</sup> party assurance**, involves the scrutiny by persons outside the normal line management chain. For instance, inspection visits from company Health and Safety Advisors, more formal corporate audits, or the collection/analysis of performance data could be considered as 2<sup>nd</sup> party assurance activities. The purpose of all those 2<sup>nd</sup>

party activities is to provide the organisation's senior management with a range of intelligence upon which to monitor and review health, safety and environmental performance, ensuring remedial actions and continuous improvements as required.

**3<sup>rd</sup> party assurance** activities may be considered similar to 2<sup>nd</sup> party assurance, but with the enhanced independence which arises from using completely separate organisations to carry out the work. The obvious example in the offshore industry is the involvement of specialist external consultancies to undertake independent assurance work on the installation's Safety and Environmental Critical Elements (SECEs) or for well design and well control measures. The outcome of such 3<sup>rd</sup> party assurance<sup>2</sup> is to give independent assurance of the performance of safety and environmental critical equipment and systems to senior management of the organisation, and hence enable them to make decisions as to the continuing adequacy of their major hazard management and control systems.

In contrast to the three previous categories, **Competent Authority's Inspections** (as part of "overseeing compliance") are not part of the operator's/owner's Safety and Environmental Management System.

Inspection is the principal type of oversight which CAs will need to undertake when there is offshore exploration or production in their waters. Such inspections do not need to cover every aspect of the installation, and should not be seen as a replacement for the operators/owners' arrangements for auditing its own systems and standards. Rather, CA inspection activity provides an overall evaluation of how installation operators and owners are complying with their legal duties, based on a sample of key safety and environmental management systems.

Arising from that, the CA should be able to identify significant failings in the major hazard controls and systems on the installation, and thus come to an overall judgement about the capability of the operator/owner to comply with the controls and requirements of Member State's implementing legislation of the OSD. It thus provides the necessary information upon which the CA can decide whether enforcement action is appropriate, for instance by requiring improvements in (or even prohibiting) the operation of an installation<sup>3</sup>, requiring reviews/amendments to existing documentation such as RoMHs<sup>4</sup>, or even instigating the Member State's penalty arrangements for infringements to national legislation<sup>5</sup>.

Although the OSD restricts its inspection obligations on CAs to actions focused on the effective oversight of the major hazard requirements of the Directive, there may also be occasions, depending on how a Member State organises its safety and environmental regulatory systems, where CA offshore inspections could cover wider aspects.

For instance, the OSD's "sister" Directive 92/91/EEC<sup>6</sup> lays down minimum safety, health and welfare requirements for offshore installations, some of which are outside the scope of the OSD (for instance, worker protection from non-major hazards, and a range of health and welfare issues, such as the provision of appropriate accommodation, first aid, toilets and washing facilities). Although Directive 92/91/EEC does not specifically include inspection/oversight obligations on Member States, a number of EUOAG members will conduct inspections of these aspects of their national legislation in conjunction with inspections focused on major hazard compliance. Such an approach is sensible, and avoids unnecessary duplication.

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<sup>2</sup> The OSD does not specifically require "3<sup>rd</sup> party" verification. The requirements of the Directive are for "independent verification [...] by an entity or an organisational part of the operator or owner that is not under the control of or influenced by, the entity or the organisational part [...]". However, experience is showing that the use of 3<sup>rd</sup> party organisations/consultancies is the usual option adopted.

<sup>3</sup> OSD Article 18(c) & 18(e)

<sup>4</sup> OSD Article 12(1), 12(7), 13(1) & 13(7)

<sup>5</sup> OSD Article 14

<sup>6</sup> COUNCIL DIRECTIVE 92/91/EEC of 3 November 1992 concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling

However, some Member States have a more fragmented offshore regulatory system, whereby the responsibility for overseeing compliance with Directive 92/91/EEC is placed on authorities different from the Competent Authority for Directive 2013/30/EU. This unfortunately introduces the possibility of duplication of offshore inspection/ compliance activities by different national authorities. In addition, this would lead to inconsistency and inefficiency of the regulatory approach, with increased costs to both industry and Government. It would also likely create stakeholders' confusion.

The specific requirements of the OSD, due to be fully implemented by Member States by 19<sup>th</sup> July 2018, could provide an opportunity to address those issues and provide simpler and more efficient offshore regulatory regimes for these two important and linked Directives.

## 5 The inspection section of the CA annual plan for effective oversight

Article 21(3) of the OSD places duties on Competent Authorities to prepare annual plans:

*"Member States shall ensure that the competent authority develops annual plans for effective oversight, including **inspections**, of major hazards based on risk management and with particular regard to compliance with the report on major hazards [...]"*.

Overall, the CA oversight will seek assurance that operators and owners are complying with the Member State's legislation which implements the OSD, and the terms of any accepted RoMH.

JRC has identified some broad objectives for the inspection component of such CA effective oversight, and these could be appropriate across the range of offshore industry covered by EUOAG members:

- a. To ensure that the key assertions in accepted RoMHs correctly reflect the reality on the installations themselves – for instance, proof that the competency levels are to the standard described, assurance that the SEMS is fully implemented, confirmation that the MODU equipment is to the condition described, etc.;
- b. To assess whether key procedures and systems within the accepted RoMH are being followed, and actually provide an adequate level of safety and environmental protection<sup>7</sup>;
- c. To seek assurance that the emergency procedures, including environmental response, escape/evacuation, and key mitigation activities such as the BOP operation and shutdown systems, are capable of working effectively;
- d. To provide sufficient scrutiny of key major hazard offshore operations (for instance drilling programmes and combined operations) to confirm that the key processes and procedures within the SEMS are actually being followed;
- e. To investigate any offshore safety and environmental concerns received via the CA's confidential reporting system;
- f. To investigate any significant incidents to ensure that the operator, owner and/or well operator have taken sufficient remedial action, and that any lessons have been identified. Should any such incident come within the category of a "major accident", to also cooperate with any separate thorough investigation<sup>8</sup>;
- g. To deliver an appropriate level of enforcement action throughout the CA oversight activities, including requiring improvements, prohibiting continued operation, and instigating prosecution/penalties;
- h. Overall, to ensure there is sufficient CA scrutiny of offshore operations to provide an environment whereby the operators, owners and well operators are complying with the relevant OSD-implementing legislation, and followed their accepted RoMH procedures.

There is no template for annual plans for CA oversight of offshore installations, so EUOAG members can use whichever approach they wish.

The overall annual plan should be focused on the oversight of the major hazard aspects<sup>9</sup>, particularly with regard to compliance with the relevant RoMH and other documents listed in Article 11 (such as the various well operations, combined operations, design and relocation notifications). The plan will need to have sufficient detail to provide a basis for

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<sup>7</sup> Including seeking the views of the workforce

<sup>8</sup> Depending on the process adopted by the Member State to implement Article 26 of the OSD

<sup>9</sup> Although OSD Article 21 only requires an annual plan focused on major hazard oversight, it would be sensible to also include any non-major hazard oversight activities which the CA intends to undertake, such as those for the welfare and occupational health and safety aspects of Directive 92/91/EEC.

resource planning within the CA, and also finalised sufficiently in advance. Plans will inevitably be bespoke to the size and maturity of the Member State's offshore industry – for instance, the amount and type of oversight activity for a Member State whose only anticipated offshore activity will be an exploratory drilling programme will be very different compared to those of a Member State with a large, mature, offshore production network.

It is suggested that the annual plan includes:-

- The planned programme of CA inspections;
- Commitment to the investigation of safety and environmental concerns;
- Details of incident investigation criteria;
- Enforcement, where appropriate;
- The anticipated level of assessment activity for the year, including new or material change RoMHs, assessment of known design notifications, and assessment of well operations and combined operations.

Article 21(3) also makes it clear that the plans should be “*based on risk management*”, which will require an assessment by the CA as to which installations or operations should receive priority, based on the consideration of their major hazard risk.

This risk ranking approach can be relatively simple for those Member States which only have a small offshore industry. With a small number of installations/operators/owners involved, a relatively “course” risk ranking process could be adopted.

For example, the frequency of inspections could be based on broad risk hierarchies<sup>10</sup> and relatively informal decisions about which poor performing operators/owners should receive more oversight attention than those who have a better track record of compliance. Such a relatively simple matrix could then be used to decide where to target inspection activity, and its frequency and scope.

Conversely, those Member States with large and mature offshore industries may need more sophisticated systems of assessment – for instance, UK's Competent Authority (Offshore Safety Directive Regulator - OSD) has developed “*Arrangements for Prioritising Major Hazard Inspections Offshore*”<sup>11</sup>, which utilises scores based on inherent hazard data, a variety of performance factors, elapsed years since last inspection, etc., to determine its annual programme of proactive inspections. However, even then, the UK CA has set a minimum requirement that every operator in the UK Continental Shelf should receive an inspection at least once every three years.

Production installations will be operating in a Member State's waters for an extended period of time, perhaps even decades, whereas non-production installations are usually mobile and operating within a MS's waters for a much shorter time. Annual plans will therefore need to consider production installations differently than non-production ones.

The key difference is that CA oversight of production installations will be spread over the life cycle of those installations and hence can be considered over an extended time period and take into account the year-on-year experience of the operator's performance. Thus, the annual plan for CA oversight of a production installation should be devised to take into account this wider timeframe, accepting that priority topics for CA scrutiny will inevitably need to be spread over several years.

For instance, some CAs set themselves the objective that each production installation should receive an inspection concentrating on aspects from each of their core offshore

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<sup>10</sup> For example, manned platforms deem higher risk than remotely operated ones, gas compressor platforms higher risk than unmanned low pressure wellhead gas platforms, a MODU undertaking exploratory drilling considered to present a similar or higher risk profile than an established production installation, etc.

<sup>11</sup> <http://www.hse.gov.uk/offshore/methodology-offshore-installations.pdf>

specialisms (for instance, fire & explosion, emergency response, structural integrity, marine issues, SEMS, etc.) at least every five years. An alternative approach could be to aim at inspecting, via sampled evaluation, the full scope of the major hazard controls identified in the relevant RoMH over a similar timescale.

The need to achieve such longer-term objectives should be reflected in the activities which are chosen to be in the plan for a particular year. One option is that, as part of their planning process, CAs maintain high-level oversight plans for each of their production installations spread over a certain period (for instance, five years), which are then used at the beginning of each year to formulate the overall annual plan for CA oversight for that year.

When devising the annual plan of oversight, it would be important to consider if a number of production installations are under the same operator, and hence have common management structures using the same SEMS, verifier, emergency response systems, etc. In such cases, it will be inefficient (both for the CA and the operator) to treat each installation individually, and much more effective to coordinate/integrate the total CA oversight for that particular operator<sup>12</sup>.

Conversely, many non-production installations will only come into a Member State's waters for a short period of time, and may involve an installation owner who is unknown to the CA. If they are involved in exploratory drilling, there may be the need for heightened oversight because of public concerns (especially post-Deepwater Horizon).

A suggested content for an oversight plan for such a "transitory" MODU is provided in **Annex 1**. However, it is often the case that the same MODU or flotel will return several times to a MS's waters, albeit possibly working for a different operator, which provides the CA with the opportunity to undertake inspections with longer-term objectives. So, for those non-production installations CAs may want to prepare a high-level plan for their oversight spread over several years. Where the same owner has a number of non-production installations working in a MS's waters in any given year, a similar approach to that suggested for multiple production installations with the same operator may be applicable.

It is recommended that a summary of the annual plan, taking into account any sensitive or commercial aspects of the detailed information, is also made available (for instance, via the CA website) to the relevant offshore stakeholders, including offshore operators/owners and their workforces. This will raise the profile of the work of the CA and will manage expectations about the level of the planning inspection activity.

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<sup>12</sup> For instance, by choosing to concentrate on inspecting a small number of core topics/themes across all that particular operator's installations during any one year. This may have more impact in improving the operator's standards for those topic/themes chosen, but such an approach would not preclude particular installations also receiving inspections focused on other issues.

## 6 Planning competent authority inspections

Competent Authority's inspections are one of the principle ways in which effective oversight is delivered.

As noted previously, Directive 2013/30/EU does not specify what form CA inspections should take, or their purpose. From experiences of regulatory activities in other major hazard industries, the usefulness of unannounced "spot checks" is very low<sup>13</sup>, as CA major hazard oversight should concentrate on assessing complex systems of work, competence, preparedness, etc., rather than the simple presence of items of hardware or paperwork.

The concept in the Directive for annual plans of effective oversight reflects this need for complex interventions by CAs and, of course, the logistics of accessing offshore installations.

CA oversight, as detailed in the OSD, is in relation to the major hazard aspects of the installation, particularly with regard to the accepted RoMH. One inspection approach would be to select a number of key major hazard topics using the information in the RoMH. The inspection activity could then be devised to assess a selection of those topics to identify whether the assertions in the RoMH are properly reflected on the installation, and to cover some of the other related inspection objectives, as suggested in Section 5.

The topics for this sample evaluation of major hazard controls will be bespoke to the installation, and could depend upon those raised during the RoMH assessment, but typical subjects include:

- Assessment of the competency provisions of the installation management and workforce, including contractors;
- Sampling activities to assess whether the installation SEMS is fully implemented;
- Sampling activities to assess the installation's fire and explosion detection and mitigation controls;
- How the independent verification system has been implemented, and whether it is comprehensive;
- Evaluation of how the actual provisions for emergency response, both for escape/evacuation/rescue for installation personnel and the environmental protection response, match the provisions in the accepted Internal Emergency Response Plan;
- Issues of maintenance and plant integrity;
- Helideck operations (if appropriate);
- For non-production drilling installations, assessment of pressure management and blow-out prevention;
- Station keeping and jack-up arrangements (if appropriate);
- Non-major hazard issues<sup>14</sup>, such as quality and suitability of accommodation arrangements and adequacy of first aid provision.

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<sup>13</sup> That does not mean that CAs should not occasionally consider the need for no notice inspections. However, the amount of meaningful information about the operator/owner's major hazard control which can be gathered by such "spot checks" will often be limited, so no notice (or short notice) inspections ought to be relatively infrequent.

<sup>14</sup> Such non-major hazard issues, and their CA oversight, are not included in the OSD but are covered by the requirements in Directive 92/91/EEC.

However, CAs should ensure that the annual planning process for such inspections retains flexibility, so that they can respond appropriately to events or intelligence which raise doubts about the operator/owner's control of particular major hazard risks. For instance, if the CA becomes aware that an installation is subject to significant concerns from its independent verifier, or is the subject of a series of complaints from the workforce or other stakeholders, or has a worrying pattern of low level incidents, these factors may all influence the timing or scope of the next inspection.

Before each CA inspection activity, the objectives of the inspection should be agreed and a suitable team selected with the required regulatory and technical competencies. Team members will need to be familiar with the relevant RoMH. Although such a team could include members outside the CA (if reliance is being made on another Member States' personnel or on 3<sup>rd</sup> party consultants), it is strongly recommended that the Team Leader/Project Manager is from the CA itself. The roles and responsibilities of each team member will need to be clearly defined and agreed.

For each inspection objective, an appropriate audit/inspection protocol should be developed<sup>15</sup>. Such protocols could include, for example:

- the topics to be covered in the inspection;
- the installation staff to be interviewed;
- the range of documentary evidence to be sought;
- the level and type of physical checks to be undertaken.

Appropriate and consistent levels of proof and/or standards against which to assess compliance for each topic should be agreed by the team. Systems for documenting the inspection activities, for ensuring consistency of approaches and actions/conclusions via internal reviews, etc., and for reporting back findings and recommendations to the operator/owner management and workforce should all be developed. Finally, an outline agenda and timetable of the inspection should be drafted.

The installation management will need to be informed prior to the actual offshore visit, not least to make appropriate arrangements to transfer CA personnel offshore and any overnight accommodation on board. It would be sensible at this stage to share the proposed inspection protocol, so that the operator/owner can anticipate what personnel will need to be available to assist the CA inspectors.

Not all inspection activity necessarily needs to be performed offshore. Some initial interviews and documentary scrutiny are often carried out at a shore base.

Organising and delivering an offshore inspection can be a complex exercise. The *Inspection Plan Template* in **Annex 2**, based on the practise of an EUOAG member, provides a structure to assist. It is strongly recommended that CAs ask operators/owners to designate a member of their staff as a liaison point (sometimes termed "coordinator") for every offshore inspection. Such a coordinator can make the logistical arrangements for the inspection and act as a single point of contact on behalf of the operator/owner when documentation or other information is needed beforehand. This is common practise for a number of EUOAG CAs.

Every CA will need to document its operating procedures for inspection, as required by OSD Annex III. The safety of its own staff and consultants should also be considered, with appropriate risk assessment and the development of safe procedures (with any required training) before the offshore visits. This is particularly important where the

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<sup>15</sup> The websites of some mature offshore Competent Authorities, such as HSE (UK), CRU (Ireland) and NOPSEMA (Australia) detail their approaches to offshore inspection, investigation and enforcement. Such documents and guidelines can be found in the *Publications* section of the ViCOS platform (<https://euoag.jrc.ec.europa.eu/vicos/index.php?r=site%2Fpublications>).



chosen offshore inspection activities are likely to expose inspectors to additional risks, such as entry into confined spaces.

## **7 Practical advice on how to conduct a competent authority inspection**

It is standard practise to commence each inspection with an initial introduction to the offshore management (including the Offshore Installations Manager – OIM) and representatives of the workforce, and a discussion/presentation about the proposed agenda of the CA inspection.

At the opening meeting with the installation management, the CA team should agree a broad timetable for their proposed activities and establish clear arrangements about who they would like to interview, what installation-based systems they would need to access, and what areas of plant they would need to inspect.

Whilst the CA team should always bear in mind that they will be working on an installation which requires 24/7 attention by the installation crew, they should expect (assuming there has been good communication with the installation management beforehand) that sufficient installation personnel will be available to respond to their requests. It is common for installation operator/owner's dedicated "coordinator" (see section 6) to be available throughout the period of the offshore inspection to act as a constant point of contact.

Any necessary facilities for the CA inspection team should also be agreed, and it is recommended that the team is allocated a private area for their internal discussions and interviews with installation staff.

A familiarity tour of the installation, and its systems, should then follow, the extent of such a tour obviously depending upon the CA personnel's familiarity with the installation. The inspection team will need to undertake any installation safety induction, such as the emergency response arrangements which the CA personnel would need to follow.

The various strands of the chosen inspection activities should then start, using inspection templates or protocols which had been devised during the inspection planning.

Members of the CA inspection team will need to record contemporaneous notes during their work, and it is recommended that there are formal notebooks or systems for doing this. Such written information may form the basis for oversight enforcement action, so should be sufficiently detailed and taken with the expectation that they may subsequently be scrutinised by others. If photographic evidence is required, the use of cameras should be agreed with the operator/owner beforehand because of the risk of using them in potentially flammable atmospheres, and appropriate permits given.

On occasions, the inspection team may be required to take samples, take formal copies of documentation, undertake more formal interviews with those working offshore, and possibly direct that particular operations should cease if they have significant concerns<sup>16</sup>.

It is recommended that the CA inspection team schedule regular breaks to keep in contact with other team members and also to rehydrate, etc.

The inspection schedule should be realistic in its scope. As the overall approach of a CA inspection is generally one of sampling the SEMS, it is preferable to concentrate on a smaller number of topics and do it thoroughly, rather than trying to cover too wide a range of issues within the time available. Inspections will almost inevitably identify other areas to explore, so the CA inspection Team Leader should be aware of the need to amend/curtail the inspection schedule whilst offshore.

The duration of the CA offshore inspection obviously depends on the numbers of topics chosen to inspect, the depth of the inspection scrutiny, and the number of CA personnel available. General practice seems to be that a two-day offshore inspection, with the CA

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<sup>16</sup> All such activities ought to be contained within the CA's detailed operational procedures, and appropriate training given to inspectors.

personnel staying overnight in the installation's accommodation, is easily managed, and this enables all the shifts to be scrutinised, not just the day-shift activities. Of course, some installations can be easily accessed from the land, which could allow CA inspectors to return ashore overnight.

Whilst three-day (or more) offshore inspections can be undertaken, there would be increasing issues of inspector fatigue, availability of beds, and disruption of the installation due to the intrusive nature of inspection activity for such a length of time, so may only be appropriate in special circumstances.

At the completion of all the planned inspection activities, but whilst still offshore, the CA inspection team should discuss and agree their initial findings amongst themselves. Decisions made by the inspection team whilst offshore should be formally recorded for audit purposes.

Where they have identified particular issues of concern, they will need to decide on appropriate actions, including any immediate enforcement options (see Section 9).

A closing meeting with the installation management and workforce should then be carried out before leaving the installation, ensuring that any required actions are clearly understood and accepted. At such a meeting, it is recommended that feedback from the inspection team should also include positive findings, where appropriate.

Practical suggestions for ways of conducting offshore inspections are given in the following two case studies<sup>17</sup>:-

- **Inspection Case Study 1** considers an inspection focused on assessing operator/owner compliance with issues relating to Permit to Work (PTW), sometimes referred to as "control of work arrangements". A key part of CA oversight for any type of offshore installation is an inspection to assess how the PTW system is implemented in practice, as deficiencies in PTW systems are a significant contributor to incidents on offshore installations;
- **Inspection Case Study 2** concerns an inspection of the arrangements for the escape, evacuation and rescue of installation personnel in the event of a major accident. This is a common topic for a CA offshore inspection, as Directive 2013/30/EU requires operators and owners to detail their arrangements for protecting persons from the consequences of a major accident, including ensuring their safe escape, evacuation and rescue. This issue is of particular relevance to the offshore workforce.

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<sup>17</sup> With acknowledgement to UK HSE "*Inspection Guides Offshore*" - [www.hse.gov.uk/offshore/inspection.htm](http://www.hse.gov.uk/offshore/inspection.htm)

## **Inspection Case Study 1:**

### **Offshore inspection for control of work/permit to work (PTW) systems**

#### **Preparation for the offshore visit**

1. A lead inspector should be allocated to undertake the offshore inspection of the PTW system, with the scope and objectives of the inspection being formally defined and agreed.
2. The Inspector should prepare by reviewing the PTW written procedure as described in the RoMH, obtaining more detailed information (if necessary) from the operator or owner. The inspector will need to understand the format of the system, how it is intended to be used in practice, and the key roles and responsibilities for those who use and manage the PTW system.
3. The Inspector should then write a brief inspection protocol detailing the "agenda" for the PTW inspection, the range of documentary evidence which will be assessed, the positions of those who will be interviewed offshore, and any physical observations which will be undertaken. A list of questions, perhaps in the form of question sheets, should be devised to assist the PTW inspection.
4. If the Inspector feels it necessary, there could be an onshore meeting with the operator/owner to explore areas relating to their PTW systems. Most operators/owner's will have a PTW users' course (or other training material) for their offshore contractors, and going through this could be helpful and may allow the inspector to interrogate the electronic PTW system when offshore.

#### **Start the PTW inspection when offshore**

5. Meet the installation PTW Co-ordinator or Controller to talk through the PTW system as it works on this particular installation. Explore their role and their competence (what training /experience do they have?). Get them to talk through a sample of recent or live permits (does the process match with what you learnt from the RoMH or other information?).
6. Browse through the electronic PTW system or look at the paper records of current PTWs. Consider issues such as:-
  - Are there suitable controls for all hazards identified?
  - Are related documents (such as isolations) attached?
  - How many are live?
  - Did the same person sign-off many permits, and could they have visited the workplace?
  - Are they completed consistently?

#### **Follow a Permit through the complete system, from start to finish**

7. Take a live permit and associated documents (risk assessment, isolation certificates, Toolbox Talk etc.) to the workplace. Ask a member of the crew using the permit to explain their understanding of what could go wrong with the work being undertaken and how the PTW is being used to control the risk. Those undertaking the work should be able to describe the worst thing that could go wrong, who would be affected, and how. They should be able to

explain how and why the risk controls identified in the RA/permit/isolation will prevent the worst from happening.

8. Whilst at the work site you should be able to assess issues such as:
  - Are all of the hazards present at the workplace identified on the Permit (or on associated risk assessments)?
  - Are the controls listed on the Permit actually in place?
  - Do the hazards listed include precursors to major hazards?
  - Could the work impact on the performance of a barrier or SECE - and is this considered on the Permit/risk assessment?
  - Are personnel familiar with the hazards and controls?
  - Has anything changed since the Permit was issued?
  - Is anyone present that isn't listed on the Permit and vice versa?
  - Have any specified isolations been undertaken as planned?
  - If there are interactions with other ongoing work – and is the team aware?

#### **Attend a Toolbox Talk**

9. Observe a Toolbox Talk, when a Permit and the scope of the work is discussed by the work team. If possible, also attend a Permit meeting where relevant parties (usually OIM and Heads of Departments) discuss several Permits in the process of being authorised, and then attend a shift handover meeting where your sample Permits are being discussed.

#### **Meeting with OIM to conclude the inspection whilst offshore**

10. These offshore discussions, and the evidence gathered, should help the CA inspector determine whether the PTW procedures have been followed and if the risk controls in place are suitable and sufficiently in accordance with the installation's accepted RoMH.
11. Should adverse issues be identified offshore, the CA inspector will need to decide what action to take. This could range from a formal letter or "finding" for minor deficiencies in the administration of the PTW system, through to more formal improvement or prohibition actions if there were widespread concerns about training in the PTW system or significant lack of adherence to the PTW procedures as detailed in the operator/owners SMS. The CA inspector may first need to discuss any proposed actions with their line manager by phone, but it will be important that the OIM /installation management and any employee representatives are fully informed about CA concerns and actions before the inspector leaves the installation.
12. Concerns identified on a particular installation may warrant a broader look at how the operator/owner's PTW systems operate with on-shore management. If that is the case, the CA inspector could collect further information offshore about the monitoring and review "controls" for the PTW system, for instance:
  - How are deficiencies and weaknesses and failings in the PTW system reported?
  - Are the PTW rules simple so that they can always be easily applied

- What are the performance standards for the various individuals involved - who does what, when, and how?
- How is the implementation and effectiveness of the PTW system measured?
- How are the findings from those measuring activities used to review and improve the PTW system?

## **Inspection Case Study 2:**

### **Offshore inspection of emergency escape, evacuation and rescue issues**

#### **Preparation for the offshore visit**

1. The allocated lead inspector for this chosen topic should prepare for the inspection by reviewing the installation's RoMH, including the risk assessment data, to identify the range of credible major hazard events which could lead to the installation workforce having to escape or be evacuated. The inspector should also become familiar with the layout diagrams of the installation (to identify the escape/evacuation routes, position of muster areas etc.), the types of escape and evacuation systems and precautions which should be in place, and the arrangements which the installation has for the final rescue of workers who have left the installation in such an emergency.
2. The Inspector should then write a brief inspection protocol detailing the agenda for the escape, evacuation and rescue inspection, the range of documentary evidence which will be assessed, the positions of those who will be interviewed offshore and any physical observations which will be undertaken. A list of questions, perhaps in the form of question sheets, should be devised, covering the scrutiny of the following topics:
  - The installation's overall emergency response plan;
  - The command and control arrangements for an emergency;
  - Emergency alarms and communications;
  - Safety of escape routes and muster areas;
  - Suitability of means of evacuation from the installation.

#### **Assess quality of installation safety briefing process**

3. As inspectors will undertake the operator/owner's installation-specific safety brief at the start of any visit (which will include details of the escape/evacuation procedures which new persons on the installation will need to follow in the case of an emergency), the lead inspector for an escape/evacuation inspection should take the opportunity to make particular note of the quality and relevance of this briefing.
  - Was it done professionally?
  - Did it provide clear and comprehensive information about the emergency procedures to be adopted?
  - Was there sufficient practical help to give confidence that persons new to the installation would be able to find and use the equipment provided?
  - What was the quality and durability of any written material?

All of this will give the lead inspector a preliminary view of the overall standards for the escape/evacuation processes on the installation.

#### **Start of escape/evacuation/rescue inspection whilst offshore**

4. After attending the safety briefing, ask the installation's OIM to describe the emergency response procedures. The OIM should be able to demonstrate that

those procedures clearly match the major hazard scenarios in the RoMH. Talk through the command and control arrangements which would be in place during a major incident:-

- Is there a written detailed emergency plan, specific to the installation? Does it specify the command structure, with clear roles and responsibilities for named personnel with emergency response duties? Is sufficient attention paid to the need to specify deputies in case named individuals are not available (particularly for the OIM)?
- Check on relevant training and competence records for key personnel;
- Review records of emergency drills and exercises – do these indicate any concerns? How were any lessons from these drills taken forward?

### **Alarms and communications issues**

5. Review the RoMH description of the installation's emergency alarms and communications with the OIM (or one of his delegated senior staff), to identify any discrepancies and to assess suitability. By questioning, ascertain the effectiveness of the installation's maintenance procedures for its communications equipment to keep such equipment working effectively.
6. As PA systems are particularly vulnerable to damage during a major incident, inspect how the installation ensures that alternative communication systems are available. Ask for a demonstration of these back-up systems (radios or separate PA system) – are they audible in high noise areas or cabins?
7. Are the installation's alarm systems, audible and visual, well maintained and appropriate? - A demonstration could confirm this.
8. Ask some of the installation personnel about the action they would take if they heard a particular alarm – Do their answers indicate any lack of competency or poor training?
9. Consider the installation's arrangements for external communications with others, such as maritime authorities/coastguard during a major incident. Are these arrangements robust? Are radio aerials located in safe locations?
10. Discuss the installation's responsibilities for initiating the formal Internal Emergency Response Plan. Are these well understood? What contribution would the installation make?

### **Emergency command and control issues**

11. Go to the installation's Emergency Response Room, which is usually the Control Room or the Temporary Refuge (TR). Ask for demonstrations that personnel working there during a MH emergency would be able to survive and to monitor, control and implement emergency response procedures:
  - Seek an explanation of how smoke and gas ingress will be prevented. Where this relies on such equipment as dampers, the installation ought to have ways of checking that the equipment will react within a specified performance time, so asking for a demonstration of closure times, etc. is a valuable inspection technique;
  - Look at integrity of Control Room/TR, such as air lock doors, blast protection, etc. What systems are in place to ensure that these are



maintained? Look at relevant records to assess whether any maintenance backlog is being adequately managed;

- How would the installation monitor the atmosphere within the Control Room (temperature, CO, etc.) during such an emergency? Are alarm levels set?
  - If the TR is separate from the Control Room, repeat.
12. Overall, do you get the impression from the offshore personnel you talk to that the emergency control and response procedures are well understood and practised? If not, explore issues of competency, training and what checks are done to ensure compliance. Enquire about the last full emergency drill, what transpired, and how any lessons were captured and taken forward.

### **Escape routes**

13. Walk a sample of the escape routes from high hazard areas to muster areas. Are the escape routes clearly signed and marked? Will the signs be readable in low light and smoke conditions? Are alternative routes easily identified? Are the routes kept clear? Will the routes provide adequate protection from thermal radiation and smoke?
14. Ask for a demonstration that the emergency lights will operate as anticipated. For example, select an area, check that the emergency lights work under normal power and then under battery power when main power turned off. What percentage of emergency lights work in this demonstration? Ask to see maintenance records to check whether they are up-to-date.
15. Visit the designated muster areas (including any alternative muster points). Are they of sufficient size for the maximum numbers anticipated? Is there space to put on any relevant PPE, such as evacuation suits/life jackets? Ask the installation personnel to demonstrate how all those on the installation will be accounted for when they arrive at these points prior to evacuation.
16. Are any escape routes to sea in good condition? Does the emergency lighting cover these routes? If "descender" type escape devices are used, what training has been given? Check whether maintenance records are current.

### **Evacuation arrangements in case of an emergency**

17. Confirm that the actual arrangements for evacuation from the installation, such as by helicopter or lifeboat, are in accordance with the RoMH. Are the assumptions which led to the location and type of evacuation method still valid (has the maximum numbers on the installation increased, have there been any significant changes to the plant layout, etc.)? How would injured personnel on stretchers be evacuated?
18. Check a sample of the maintenance records for the evacuation equipment. Are the maintenance schedules clear, and being achieved? Ask for a demonstration that the means of evacuation are kept in a state of readiness (for example, will lifeboat engines start?).
19. View the evacuation points. Are they well laid out and signed? Are they kept clear and ready for immediate use? Is any necessary emergency lighting available (including spot lights to the sea below lifeboat launch areas)?

20. In case of lifeboats, seek assurance that systems for protection from thermal radiation are in place and adequate.
21. Undertake a similar inspection approach to the means of escape from the installation should the arrangements for evacuation fail, including controlled descent to the sea and use of life rafts. Explore the adequacy of training given to all installation personnel on the use of such means of escape.
22. Check on availability and suitability of the rescue arrangements.

### **Emergency PPE and lifesaving equipment**

23. The RoMH should detail the rationale behind the choice of emergency PPE such as survival suits, life jackets, etc., which will depend upon the range of escape/evacuation methods available and defined sea survival and recovery times. Are these appropriate given the actual circumstances on the installation?
24. Select a sample of the PPE or lifesaving appliances. Is their condition and availability satisfactory? Are their maintenance records up-to-date? Can the installation personnel provide evidence about appropriate training?

### **Meeting with OIM to conclude the inspection whilst offshore**

25. This offshore inspection should help the CA inspector determine whether the arrangements which are actually in place on the installation for evacuation, escape and rescue are suitable and sufficiently in accordance with the accepted RoMH. The conclusions should be discussed with the OIM/installation management and any employee representatives before leaving the installation. Should adverse issues be identified offshore, the CA inspector will need to decide what action to take, following the process already detailed in Case Study 1 previously. Serious concerns about key parts of the evacuation, escape and rescue arrangements could warrant immediate action, such as requiring the immediate reduction in risk levels on the installation (e.g. by shutting in wells, stopping maintenance activities which could risk breaching hydrocarbon containment, etc.) or by reducing manning levels.

## 8 Post-inspection activities

Upon return from the installation, the CA inspection team may need further discussion amongst themselves to review the information they have gathered, and even seek further information from the installation's operator/owner at their shore base.

After the inspection team has subsequently drafted its report of the inspection, it is good practise to have an internal quality management system to approve the report, and to ensure that any differences of opinion in the inspection team can be resolved via any necessary peer review or resolution process. The format of the inspection report is a matter for the CA concerned, but **Annex 3** illustrates a structure which could be appropriate.

After the report of the inspection has been approved, a meeting with senior operator/owner management and the relevant licensee ought to be held to confirm the findings, and discuss any actions required and lessons learned. These should be formally communicated after the meeting.

Although not specifically required under the OSD, good practise is that a summary of the inspection findings and any action subsequently taken by the CA should then be given to those who work on the installation or their representatives.

At the conclusion of the inspection, the CA inspection plan can then be amended to take into account the findings of the inspection, for instance by scheduling in another offshore visit (sometimes termed a "reassurance inspection") to check that the adequacy of the operator/owner's response, or to amend the planned intervention for that installation and/or operator/owner in some other way.

Instigation of more formal enforcement actions may need to await the conclusion of the inspection reporting process, depending on each Member States' practise.

## 9 Enforcement considerations

CAs undertake offshore inspections as part of their overseeing compliance activities, so the principal outcome of an offshore inspection will be an assessment of how well the operator/owner is controlling its major hazard risks and, by reference to the requirements of Directive 2013/30/EU, how well the operator/owner is complying with the MS's implementing legislation.

After completing an offshore inspection, the inspection team (in conjunction with their senior management, if necessary) will need to consider the evidence which they have obtained over the range of topics that the inspection covered. A decision will then need to be made about whether the CA should take any action and, if so, what level of enforcement is appropriate.

The OSD<sup>18</sup> requires all CAs to have policies, processes and procedures which cover, amongst other issues, its enforcement actions, bearing in mind the obligations on the CA to achieve transparency, consistency, proportionality and objectivity in its regulation of offshore operations in its waters. Although MSs have different legal and administrative systems, and use differing terms for the various types of enforcement mechanism they have at their disposal, there are a broad range of actions which are available to all CAs after such an offshore inspection:-

- 1) No action. This will be where the inspection has identified no shortcomings in the operator/owner's control of their major hazard risks and legal compliance, or only very minor issues. In such circumstances there is the opportunity for the CA to positively reinforce the operator/owner's good standards, or even make further suggestions to encourage the operator/owner to further improve their major hazard controls beyond what is legally required (moving from "good" to "best" practise). However, it is appreciated that some CAs are uncomfortable in going beyond their clear legal enforcement role.
- 2) Administrative, non-binding "directions". This could be verbal advice, appropriately noted in the CA's files, or formal correspondence with the operator/owner confirming the CA's views about the level of compliance with the Member State's legislation, and (usually) providing suggestions for action to be taken. Although such an administrative "direction" (some CAs use the term "finding" to describe this type of action) will be a matter of record which the CA could take into account when considering future incidents and non-compliances, failure by the operator/owner to rectify these matters does not, in itself, lead to formal sanctions. However, the CA has the option to escalate their action if little or no response is subsequently made by the operator/owner.
- 3) Formal sanctions by the CA. The OSD<sup>19</sup> empowers CAs to require improvements or even prohibit operations, following an inspection. How this mechanism is adopted will vary between Member States, but often there will be some sort of formal Improvement or Prohibition "Notice" requiring specific action within a defined time period. There would be clear penalties if the terms of such a "Notice" are not followed.
- 4) Prosecution and/or administrative financial penalties. Again, this type of enforcement action will vary between Member States, but represents the most severe legislative sanctions available. Prosecution via the Member State's penal system is a common option, with the possibility of fines or even custodial

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<sup>18</sup> Article 9 and Annex III of Directive 2013/30/EU

<sup>19</sup> Article 18(e) Directive 2013/30/EU

sentences for individuals. Some CAs or their Ministries also have the facility to directly impose fixed penalties themselves for specific violations.

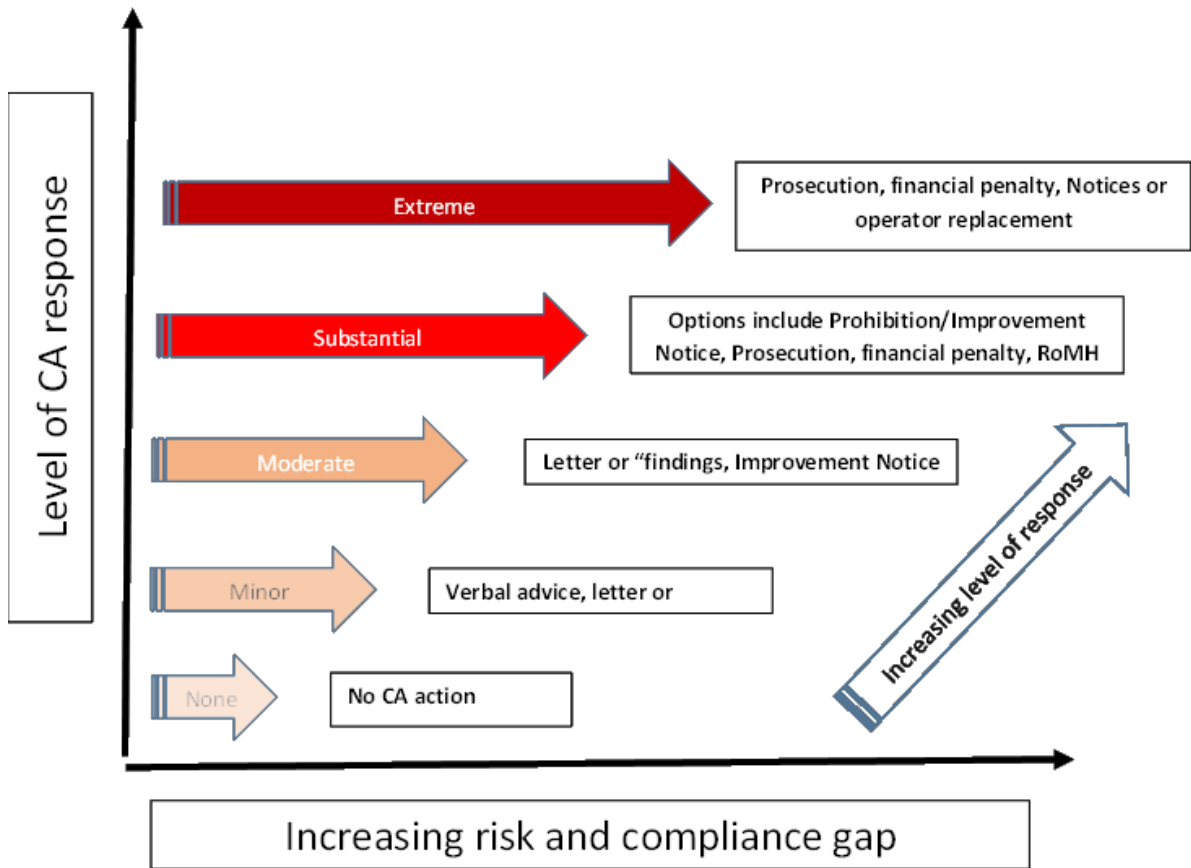
- 5) Replacement of the Operator. Where the results of an inspection identifies very significant issues relating to an operator's ability to meet the requirements of the Member State's implementing legislation, the OSD<sup>20</sup> provides the CA with an additional obligation to inform the licensing authority. In such a situation, the licensing authority should then notify the licensee, who should directly take over the responsibilities for those duties from the operator, and propose a replacement operator without delay.
- 6) Direction to revise the RoMH or undertake a periodic review. CAs also have the power under the OSD to direct that a periodic review of a RoMH be undertaken, or that specific updates to the RoMH should be made. These are options which could also be considered after an inspection.

The mechanism by which a CA chooses which level of action to take in a given set of circumstances will be part of the CA's procedures, and should be devised to ensure consistency and transparency of such decision making. Although the actual process will inevitably vary between CAs, common approaches<sup>21</sup> tend to firstly assess, on a qualitative basis, the gap between what the operator/owner has achieved in terms of risk and compliance against benchmarks of what is considered good practice in standards, legislation and industry practise. The wider the gap, the more severe the initial enforcement expectation would be, as Figure 2 below shows. After the initial enforcement expectation is identified, other relevant factors can then be taken into account, such as the incident and compliance history of the operator/owner at this installation and elsewhere, the attitude of the management of the installation and the level of confidence that they will comply, and whether there was any deliberate seeking of economic advantage by the non-compliance. This additional information could either increase or decrease the initial level of the CA enforcement.

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<sup>20</sup> Article 6(4) Directive 2013/30/EU. The applicability of this Article is "where the competent authority determines that the operator no longer has the capacity to meet the relevant requirements under this Directive [...]".

<sup>21</sup> The *Publications* section of the ViCOS platform provides references to a range of offshore Competent Authority approaches. Of particular relevance are the UK HSE Enforcement Management Model and the Greek HHRM Enforcement Procedure (<https://euoag.jrc.ec.europa.eu/vicos/index.php?r=site%2Fload-page&id=b5b1d65c-f53d-11e7-8ef8-0050563f0cd5>).



**Figure 2 Initial enforcement expectations**

## 10 Competency requirements for competent authority inspectors

A crucial issue for CAs is to ensure that they have competent personnel to undertake oversight inspections. There is no recognised standard for the training, qualifications and experience of those who undertake such work, and the practises of CAs regarding the type of staff they recruit for this work varies<sup>22</sup>. However, the competency requirements for CA inspectors can be considered in five broad categories:-

1. Knowledge of the offshore industry and its technology. Although it is not essential that CA personnel are technically qualified in an offshore specialist area or have previously worked on the industry, they will need to be familiar with the structure of the offshore industry and how it works, have an understanding of the processes/activities which occur offshore, and be able to understand technical information relating to the major hazard risks which occur on installations. The range of topics with which a CA may need to be involved, however, is wide and includes some niche areas such as drilling and marine matters. It would be unrealistic to expect any one individual to be familiar with all such topics. Having a core team of CA inspectors with a range of offshore knowledge, and the ability to involve others with deeper topic specialist knowledge when necessary, would be appropriate.
2. Knowledge of the laws and rules that are applicable. Competency in this area distinguishes a CA offshore inspector from an offshore technical specialist.
3. Skills on how to perform well. CA inspectors need a range of “soft” inspection skills to enable them to undertake their role. These would include appropriate assertiveness, emotional intelligence, personal resilience, communication skills (verbal and in writing), the ability to persuade/negotiate, problem analysis/solving, and investigation skills.
4. Drive to do well. Inspectors need to be motivated and committed to delivering quality work.
5. Personal Safety Requirements. Inspectors will also need to comply with any specific industry or operator/owner's safety requirements for those visiting an offshore installation, such as helicopter ditching training, installation evacuation/escape, Personal Protective Equipment (PPE), training for escape respirators, smoke hoods, etc.

For the JRC Training course for Offshore Competent Authorities on “Inspections of Offshore Installations” in November 2017, Mr. Rob Velders developed a list of key areas for effective inspectors – these “Ten Commandments for Good Inspectors” are reproduced in **Annex 4**. A subsequent Group Exercise at that training course also looked at the attributes of a good CA inspector, and the outcomes of that exercise are summarised in **Annex 5**.

There will already be public authorities in every Member State who have been responsible for enforcing the Seveso Directives for many years. The Seveso Directives<sup>23</sup> are concerned with the control of on-shore major hazards, and the types of expertise which those authorities have needed would, to a great extent, be adequate for offshore oversight.

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<sup>22</sup> However, ISO 19011 “*Guidelines for Auditing Management Systems*” sets out a number of criteria for selecting auditors for management system audits, and these are relevant to Competent Authority personnel involved in inspection and oversight activity.

<sup>23</sup> Seveso I (Directive 82/501/EEC), Seveso II (Directive 96/82/EC), and Seveso III (Directive 2012/18/EU)

For instance, competences needed to assess fire and explosion control in an onshore chemical plant will be very similar to that undertaken offshore, and this commonality is also relevant for such areas as permit-to-work systems, competence, human factors, plant maintenance systems, etc. It is therefore recommended that newer offshore CAs establish good links with their equivalent Seveso authorities, as there could be significant efficiency benefits of joint training, working or sharing inspector resources.

Considering the broad objectives of CA inspections, as described in Section 5, a significant percentage of inspection topics do not necessarily require deep offshore specialist knowledge.

It is appreciated, though, that some offshore topics demand particularly specialist knowledge, and whereas larger Member State CAs can directly employ "niche" specialists such as well/reservoir engineers, naval architects, etc., CAs regulating smaller offshore industries may decide to only secure such expertise when needed.

As a guide, if a CA needs to use external specialist resources during RoMH assessment, they will need to use that type of specialist resource again when undertaking oversight involving those topics. Options include using expertise from existing national institutions or academia, and securing consultancy support.

It is important to appreciate, though, that any 3<sup>rd</sup> party expertise which the CA uses as part of its offshore oversight may not have the requisite "inspector" competencies (only the technical knowledge ), so will need to operate directly under the control of the CA, and in a project management environment.



## 11 Different styles/options of CA inspections

These guidelines have so far only considered inspection oversight focused on individual installations or operators/owners. There may be occasions, though, where CAs will want to undertake more sophisticated programmes of inspection. These could go beyond merely securing compliance and progress into areas of continuous improvement, seeking to raise the overall standards of the offshore industry they have oversight for.

Some EUOAG CAs have a history in undertaking such programmes of inspection, for instance the UK HSE's work on both hydrocarbon releases ("KP3")<sup>24</sup> and ageing and life extension ("KP4")<sup>25</sup>, the NSOAF *Multi-National Audit into Human and Organisational Factors in Well Control*<sup>26</sup>, and the *Rig Inspection Project* undertaken by the Dutch State Supervision of Mines, which focused on post-Macondo issues of well control.

What distinguishes these programmes from the normal CA oversight activities is that the CA is seeking to influence the industry as a whole, and not just those which are visited during the inspections.

Usually there is extensive use of check sheets and inspection forms<sup>27</sup> to ensure consistency of approach across all installations which are visited as part of the programme, and a final, published report bringing together the lessons learned, often using colour coded matrixes to demonstrate areas of particular strength or weakness.

Such national programmes may not be appropriate for all EUOAG CAs, but they are worthy of consideration by those which have a sizeable offshore industry, as the results of such programmes can have beneficial influence beyond the installations which are actually visited by CA inspectors as part of that programme. Such initiatives could also, in the future, be an option for the EUOAG as a whole.

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<sup>24</sup> <http://www.hse.gov.uk/offshore/kp3.pdf>

<sup>25</sup> <http://www.hse.gov.uk/offshore/ageing/kp4-report.pdf>

<sup>26</sup> <http://www.hse.gov.uk/offshore/nsoaf.pdf>

<sup>27</sup> A good example are the inspection templates prepared for the UK HSE initiative into safe lifting during drilling and deck operations offshore - <http://www.hse.gov.uk/offshore/kp2.pdf>

## **12 Conclusions**

The Joint Research Centre has developed these guidelines for Competent Authority's inspections of offshore installations, based on its experience of undertaking advisory support for a number of Competent Authorities on inspection-related issues and the training course which it ran for Competent Authorities in November 2017 in Zagreb-Pula, Croatia.

The guidance is primarily aimed at those Member States with less mature offshore industries and inspection procedures, and should provide a common understanding about Competent Authority inspection responsibilities.

The aim of this report was to guide offshore CA personnel through the various stages of an offshore installation's inspection – from planning of the inspection to reporting of the findings to the industry and to taking enforcement actions.

Practical advice for efficiently planning and carrying out inspections was provided, along with the fundamental competency requirements for personnel undertaking such inspections.

## List of abbreviations and definitions

BOP	Blow Out Preventer
CA	Competent Authority
CRU	Commission for Regulation of Utilities (Ireland's Competent Authority)
EUOAG	European Union Offshore oil and gas Authorities Group
HSE	Health and Safety Executive (part of UK's Competent Authority)
NGO	Non-Governmental Organisation
MH	Major Hazard
MODU	Mobile Offshore Drilling Unit
MS	Member State
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority (Australia's authority for offshore safety)
OIM	Offshore Installation Manager
OSD	Offshore Safety Directive (Directive 2013/30/EU)
OSDR	Offshore Safety Directive Regulator (UK's Competent Authority)
PPE	Personal Protection Equipment
PTW	Permit to Work
RoMH	Report on Major Hazards
SECE	Safety and Environmental Critical Element
SEMS	Safety and Environmental Management System
TR	Temporary Refuge

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## Annexes

### Annex 1. Suggested content of oversight plan for MODU drilling campaign

What	When	Details
<b>Initial inspection on MODU</b>	Upon arrival of MODU to its initial station	<ul style="list-style-type: none"> <li>➤ Introduction to rig management and workforce, with a presentation to the workforce about the programme of competent authority's inspections;</li> <li>➤ Familiarity tour of MODU, and MODU systems, by the inspection team;</li> <li>➤ Assessment of a selection of key topics from within the accepted RoMH, to ensure that the assertions therein are properly reflected on the rig. The areas to be covered will need to be bespoke to the MODU, and will also depend upon issues raised during the RoMH assessment, but will probably include:               <ul style="list-style-type: none"> <li>✓ Assessment of the competency provisions of MODU management and workforce;</li> <li>✓ Assessment of whether the MODU SEMS is fully implemented;</li> <li>✓ Assurance regarding jack-up or station keeping arrangements (depending on the type of MODU);</li> <li>✓ How the independent verification system has been implemented, and whether it is comprehensive;</li> <li>✓ Evaluation of how the actual provisions for emergency response, both for escape/evacuation/rescue for rig personnel and the environmental protection response, match the provisions in the accepted Internal Emergency Response Plan;</li> <li>✓ Scrutiny of any key maritime issues such as collision avoidance precautions;</li> <li>✓ Helideck operations (if appropriate);</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>✓ Quality and suitability of accommodation arrangements;</li> <li>✓ Adequacy of first aid provision;</li> <li>➤ Internal discussions within the inspection team to discuss/agree on initial findings and any actions on issues of concern;</li> <li>➤ De-brief with management and workforce before leaving MODU;</li> <li>➤ After subsequent drafting/agreeing on the report of the inspection, meeting with senior management of drilling unit owner and the relevant licensee to confirm findings and any actions/lessons learned.</li> </ul>
<b>Reservoir entry preparedness inspection</b>	During the initial phase of drilling operations, but prior to entering potential hydrocarbon bearing formations	<ul style="list-style-type: none"> <li>➤ A similar format to the initial inspection;</li> <li>➤ Key topics which could be included are: <ul style="list-style-type: none"> <li>✓ Follow-up to any key issues outstanding from the first inspection;</li> <li>✓ In-depth assessment of MODU's provision for pressure management (including blow-out prevention) during drilling and drill floor safety, in accordance with RoMH provisions and the well notification;</li> <li>✓ Evaluation of MODU's control of work processes (e.g. sample scrutiny of permits to work and isolations);</li> <li>✓ Assessment of the "state of readiness" of MODU's emergency response procedures, including conditions of temporary refuge and HVAC system, availability of escape and evacuation facilities and spill response equipment, and how lessons from any drills have been incorporated.</li> </ul> </li> </ul>
<b>Reassurance Inspections</b>	The need for any reassurance inspections will depend on the length and complexity of the drilling programme, whether issues arise from the weekly well operations reports, and the performance by the MODU owner in meeting their responsibilities as identified in the two previous inspections.	<ul style="list-style-type: none"> <li>➤ The topics to be covered during any reassurance inspections will need to be targeted at the specific issues which give rise to the inspection itself.</li> </ul>

<p><b>Investigation of safety and environmental concerns</b></p>	<p>Upon receipt of a confidential concern</p>	<ul style="list-style-type: none"> <li>➤ All confidential concerns will be scrutinised to assess whether there is prima facie indication of a breach of legislation. If so:-</li> <li>➤ Competent Authority to undertake a formal investigation (whilst respecting any anonymity issues) to establish the validity of the concerns. The investigation will: <ul style="list-style-type: none"> <li>✓ Ascertain the facts behind the concern;</li> <li>✓ Assess whether there has been any breach of Member State’s legislation;</li> <li>✓ Ensure that any necessary remedial action is taken by the owner or the operator;</li> <li>✓ Take further enforcement action if appropriate;</li> </ul> </li> <li>➤ The findings of the investigation will be communicated to the originator.</li> </ul>
<p><b>Incident investigation</b></p>	<p>Upon receipt of details of a Major Accident or incidents reported under Article 23 (Implementing Regulation 1112/2014)</p>	<p>An investigation will be undertaken by the Competent Authority, with the purpose to:</p> <ul style="list-style-type: none"> <li>✓ identify the immediate and underlying causes of the incident, independently of the operator or owner;</li> <li>✓ establish whether there are any breaches of Member State legislation;</li> <li>✓ ensure that any necessary remedial actions are taken to prevent a recurrence;</li> <li>✓ consider whether to initiate any further enforcement action, taking into account the requirement on the Competent Authority to be transparent, consistent, proportionate and objective;</li> <li>✓ in the case of a Major incident, to make a summary of findings available to the Commission.</li> </ul>

## Annex 2. Example of a template to help offshore inspection planning (with acknowledgements to CRU, Ireland)

<b>1. INSPECTION PLAN TEMPLATE</b>
OPERATOR/OWNER:
INSTALLATION NAME & LOCATION:
PROPOSED DATES:
ADDITIONAL INFORMATION: <i>e.g. RoMH, License, relevant notifications, etc.</i>
<b>2. INSPECTION TEAM</b>
Lead Inspector: Inspection Team members: Non-CA personnel involved in Inspection:
<b>3. OBJECTIVES OF INSPECTION</b>
<i>Detail the objectives of this inspection</i>
<b>4. SCOPE OF INSPECTION</b>
<i>List of topics to be covered by this inspection, including responsible inspector for each topic.</i>
<b>5. ESSENTIAL BACKGROUND INFORMATION</b>
<i>Could include items such as:</i> <ul style="list-style-type: none"><li>• <i>Explanation why particular issues have been selected to inspect;</i></li><li>• <i>Cross-reference to relevant incidents or previous concerns;</i></li><li>• <i>Key standards against which the topics will be assessed, etc.;</i></li></ul>



- *Particularly relevant sections of the RoMH.*

## **6. INSPECTION METHODOLOGY/PROTOCOL**

- *Details of any necessary review of operator/owner documentation before inspection;*
- *Details of any planned pre-offshore inspection meetings with operator/owner at their shore base;*
- *Offshore inspection protocol for each topic to be assessed offshore, including range of documentary evidence to be sought offshore, and the level and range of physical checks or observations to be undertaken (reference out to separate documents, checklists, question sheets, etc. if appropriate);*
- *Ensure the roles and responsibilities of each member of the inspection team are clear;*
- *List of interviewees whilst offshore (reference out to separate lists if appropriate).*

## **7. PLANNING TIMETABLE**

*Depending on the CA's own processes, this section could include key dates in the preparation phase of the inspection, pre-inspection briefings, deadlines for completing reports, and arrangements for concluding post-inspection actions with the operator/owner.*

## **8. AGENDA/TIMETABLE FOR OFFSHORE INSPECTION**

*A draft agenda and indicative timetable for the offshore inspection should be prepared, and should preferably be shared with the operator/owner beforehand. Agenda and timetable may need to be amended whilst offshore for operational reasons.*

## **9. ANY SPECIFIC REQUIREMENTS/INFORMATION**

- *Useful to include key contact information for inspection team and any coordinator staff from the operator/owner;*
- *Highlight any issues relating to logistics (access offshore, accommodation, dietary issues, etc.);*
- *Identify issues relating to inspector health & safety, such as training prior to offshore visit and requirements for Personal Protective Equipment (PPE) whilst offshore.*

### **Annex 3. An example of a structure for a competent authority inspection report**

#### ***Offshore audit and inspection report***

<b>FRONT PAGE</b>	
<i>Installation Name:</i>	<i>Location:</i>
<i>Operator/Owner:</i>	<i>Inspection Date:</i>
<i>Leader Inspector:</i>	<i>Inspection Team Members:</i>
<i>Signatures/Approvals:</i>	
<b>1. SUMMARY</b>	
<i>1.1 Brief description of the inspection</i>	
<i>1.2 Summary of the scope of the work, and any particular difficulties or item which could not be completed</i>	
<i>1.3 Key findings</i>	
<i>1.4 Significant actions or recommendations arising</i>	
<b>2. INTRODUCTION</b>	
<i>2.1 Purpose of the Inspection</i>	
<i>2.2 Scope of the Inspection – including reference to Inspection Plan and any Inspection Protocols</i>	
<b>3. INSPECTION NARRATIVE</b>	
<i>3.1 Brief description of the installation, particularly any changes since previous inspection and any key operations being undertaken at the time</i>	
<i>3.2 Description of the inspection activity, including minutes of initial and close-out meetings offshore and details of engagement with workforce</i>	

<p>3.3 <i>List of persons interviewed</i></p> <p>3.4 <i>List of documents scrutinised</i></p> <p>3.5 <i>Detailed inspection record for each "topic" inspected – could be Annexes</i></p>
<p><b>4. INSPECTION CONCLUSIONS</b></p>
<p>4.1 <i>Listing of key findings [some CAs have the practise of recording positive findings as well as negative ones]</i></p> <p>4.2 <i>Assessment of compliance with legal requirements</i></p> <p>4.3 <i>Assessment of performance of the operator/owner (some CAs have systems for "scoring" operators/ owners after inspections, to provide performance indicators upon which to base future inspection activity)</i></p>
<p><b>5. PROPOSED ACTIONS</b></p>
<p>5.1 <i>Listing of significant non-compliances (cross-referenced to Member State's national legislation) and the action required by operator/owner to rectify, with appropriate timescales. It is recommended that this section if drafted in a style suitable for sending to the operator/owner as a "schedule of works", and could form the formal output from the inspection.</i></p> <p>5.2 <i>Listing of less serious issues, with recommendations for improvements (e.g. to best industry practise)</i></p> <p>5.3 <i>If appropriate, record of any particularly good or innovative practises.</i></p>

#### **Annex 4. Ten commandments for good inspectors (with acknowledgement to Mr. Rob Velders)**

Commandment #1. Your role is to protect and promote safety, quality, environment, fair competition, economic growth and protection of people. You do that based on rules **and** common sense. You inform the government and the public when requested or for other reasons (e.g. to inform the public about inspection results).

Commandment #2. You realize that companies are good for economy and employment. They need to be treated with respect unless they deserve to lose it. Good companies will not be scrutinised more than minimum (good inspections).

Commandment #3. You have good knowledge of what you inspect, about the rules and regulations that are applicable and about enforcement. You always use up-to-date knowledge and methods.

Commandment #4. You are 100% not corrupt (99% is not enough!).

Commandment #5. You always work well prepared, secure, fast and accountable.

Commandment #6. You will be clear about the goals of the inspection and on how you want to achieve them.

Commandment #7. You do not mix means (laws, fines and powers) with goals (safety, quality, fair competition, economic growth, good environment).

Commandment #8. You are empathetic: be a good listener and ask good questions to understand the duty holder. You try to really understand what you see.

Commandment #9. You shall behave and decide unbiased, fair, decent, honest, truthful, consistent, proportionate and wise.

Commandment #10. In order to be as effective as possible you react always responsively. If a duty holder:

- Is compliant → praise, reward;
- Is unaware → explain, educate;
- Makes a mistake → comfort, console;
- Is unable → help, give advice;
- Is unwilling, fraudulent, negligent or reckless → enforce (warnings, fines, naming and shaming, withdrawal of license).

## **Annex 5. Summary of group exercise at JRC training course on inspections of offshore installations**

### 1. What are the features of a good inspector?

- Needs knowledge of the subject to inspect;
- Prepares for inspections well;
- Has knowledge of the law;
- Has knowledge of the procedures to be followed to make an inspection, but also needs to know the operational procedures of what/who you are going to inspect;
- Has experience and motivation to improve inspection skills.

### 2. How do you prepare well as an inspector?

- Gather knowledge/data/information on the company to be inspected;
- Be prepared on the part of the inspection that you'll be making;
- Check RoMH of the installation, and identify the items to be inspected – based on the RoMH;
- Prepare a checklist for yourself;
- Know the law about what an inspector can/cannot do;
- Check recordings/outcomes of previous inspections;
- Good communication skills: communicate with/to the company and to the outside;
- Good follow-up (1): Make good reports, and deliver them quickly (couple of weeks);
- Good follow-up (2): Check implementation of measures from past inspections;
- Be consistent and clear about what was identified during the inspection;
- Recognise that an Inspector is only on an offshore installation once-twice per year, and will not know what happens on the installation during the rest of the time. So, try and understand the culture on the installation during the limited time you are there.
- Be a good listener:

- Ask the right questions;
- Understand what they are saying, and what they are not saying but they would like to say;
- Understand if they are trying to fool you.

3. When is an inspection from the industry's perspective being done well?

- Presents his plan for inspection before the visit (what he is going to inspect), so that for e.g. the required documentation can be made available to the inspector;
- Solution-oriented inspectors, inspectors who can provide advice. However, it is the company's duty to come up with a solution – the CA's role consists in identifying non-compliances/problems;
- Clear and transparent communication;
- Report drafting during the inspection – to give the company's a heads up on the outcomes of the inspection;
- Inspectors should follow internal (house) HSE rules.

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