

 <b>D3发电有限公司</b> D3 Power Generation Ltd.	<b>Management Systems Procedure</b>	
IMSP 14-01-NC & CA	NC, Investigation, CA & PA	Rev. 2



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## Document Control

Issue No	Date	Change details / CRF REF.
1	17/07/2017	First Issue
2	15/09/2020	Update for Environmental Incidents and Accidents categorisation as per 6.1.5

## Document Distribution

Department	Position	Name
All	All	All

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## 1. PURPOSE

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The objective of this procedure is to define responsibilities and detailed rules used by D3PG to identify non-conformities (NCs) and their root causes and risks, plan and carry out corrective actions (CAs) as well as preventive actions (PAs) accordingly.

The aim of the NCs, CAs and PAs is to address and eliminate the root causes of NCs or potential non-conformities and mitigate risks in order to improve the IMS performance.

## 2. RESPONSIBILITIES

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### Management Representative (MR):

Ensures that there is good communication and cross-functional team support amongst D3PG sections, which may identify non-conformities or risks.

### HS Officer

- Forwards any inspection and drill reports to the QHSE Manager, including those received by other D3PG sections which include HSE-related NCs
- Controls NC, CA, PA management within his/her competence
- Verifies the implementation of the CA and PA
- Provides support to the QHSE Manager to manage NCs, CAs and PAs
- Informs the QHSE Manager of any inspection and/or drills carried out, which include any environmental and/or safety-related NCs, risks and observations
- Closes off the action plans / Risk Assessments related to HSE when all issues have been tackled
- Informs the QHSE Manager of any updates or the closure of any NCs/recommendations reported

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## Document Controller

- Keeps track of all documents
- Responsible for the management of all IMS documents
- Responsible for the distribution of all IMS documents
- Updates IMSR 04-01-DCR Document Control Register

## QHSE Manager

- Controls Risk, NC, CA, PA management within his/her competence
- Verifies the records entered in the NC Register
- Verifies the implementation of CAs and PAs
- Assesses the effectiveness of CAs, in collaboration with the HSE Officer and process owners.
- Updates IMSR 14-01-IPR Improvement Planning Register, and follows up the implementation of CAs and PAs
- Updates IMSR 14-01-IPR Improvement Planning Register, following communication from other D3PG sections

## Process Owners

- Provide timely and adequate feedback on risks and NCs that arise by using the available tools and forms.
- Providing corrective and preventive actions to improve his/her process
- Provide resources for CA and PA implementation as required

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### 3. TERMS & DEFINITIONS

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**DPS** Delimara Power Station

**IMS** Integrated Management Systems

**NC\*** Nonconformity: non-fulfilment of a requirement which can arise from Audits, Inspections, Complaints, Incidents, Legal compliance etc.

**CA\*\*** Corrective action: action taken to eliminate or control the effect (or impact) of a detected nonconformity or other undesirable situation

**CAR** Corrective Action Report

**PA\*\*\*** Preventive action: action taken to eliminate the effect (or impact) of a potential nonconformity or other potentially undesirable situations.

**RPN** Risk Priority Number

\*There can be more than one cause for a 'nonconformity'.

\*\*A Corrective action shall also prevent recurrence of the same incident.

\*\*\*A Preventive action is taken to prevent an incident in the first place.

### 4. REGULATORY REFERENCES & OTHER DOCUMENTS:

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Doc. Type	Ref. No	Description	Clauses
Standards	ISO 14001	Environment Management System	10.2
Standards	ISO 9001	Quality Management Systems	10.2
Standards	OHSAS 45001	Occupational Health and Safety Management Systems	10.2

### 5. NOTES:

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Procedures are also reviewed periodically, at least once a year, in accordance to the Internal Audit Plan. Internal auditors audit the procedure and raise any inaccuracies with the process owners. Other reviews are carried out as required.

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## 6. RISK & NON-CONFORMITY (NC)

### 6.1. IDENTIFICATION & RECORDING OF RISK & NON-CONFORMITY

NC or other undesirable situations may be identified through the below activities:

#### 6.1.1. INTERNAL OR EXTERNAL AUDITS

1<sup>st</sup> Party Audits - Internal Audits

2<sup>nd</sup> Party Audits - Customer/ Supplier Audits

3<sup>rd</sup> Party Audits - Certification and Surveillance Audits

In the case of Audits, an Audit report will always be issued by the relevant body and submitted to QHSE Department. The said reports will include observations and non conformities detected. The QHSE Manager shall input these NCs or recommendations using the appropriate nomenclature as described in the '1. Reference set up' tab in IMSR 14-01-IPR Improvement Planning Register, in the said register and follow up to NC closure and verification. All NCs identified will be assigned an RPN as per the '2. Rating' tab in IMSR 14-01-IPR Improvement Planning Register, to identify high risks and take the necessary mitigation actions.

#### 6.1.2. EXTERNAL OR INTERNAL INSPECTIONS, TESTING AND DRILLS

External Inspections from ERA or other Authorities will be recorded and followed up as 6.1.1. If required, IMSF 14-02-AP Action Plan will be issued. Inspections carried out by the QHSE cover all the quality, environmental and HS aspects of all processes and operations. HSE Inspections and drills shall be appropriately reported and followed up. However, should the corrective actions required be implemented in excess of 1 week from the inspection date, the NC should be reported as per HSF 01-02-SOR Site Observation Report and HSF 01-03-EDR Evacuation Drill Report respectively and filed as in 6.1.1.

Testing of operational equipment as required by the IPPC permit is carried out in accordance to established standards. Any deviations recorded or failed tests are also to be recorded as non-conformities and should be acted upon, as required. All the details will be documented as per 6.1.1.

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### 6.1.3. RISK ASSESSMENTS CARRIED OUT BY QHSE ON IMS

Non/Periodic risk assessments are carried out by QHSE and process owners under, Environmental aspects and impacts evaluations, PFMEA and risk assessments IMSF 10-03-RMR Risk Management & Assessment Report, among others. All these assessments shall be appropriately recorded as in 6.1.1, and corrective actions shall be taken accordingly.

### 6.1.4. INTERNAL OR EXTERNAL COMMUNICATION, INCLUDING COMPLAINTS, GENERAL OBSERVATIONS RAISED ETC.

In the case of staff or contractors identifying an undesirable situation, the persons who have identified the situation shall communicate with the respective process owner and the QHSE as deemed adequate.

External or Internal communication regarding potential non-conformities can also be communicated.

In both cases, the QHSE Dept. shall evaluate the situation, request more information from the process owner and interested parties, and provide prompt feedback to resolve any issues. This should be recorded as per 6.1.1.

### 6.1.5. INCIDENTS, ACCIDENTS & NEAR MISSES

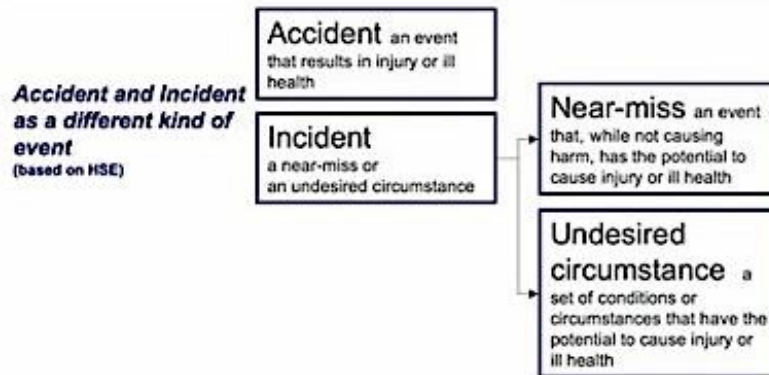
HSE Incidents, Accidents & Near Misses are also viewed as an NC and are logged in the IMSR 14-01-IPR Improvement Planning Register and resolved through EMSF 02-01-AINR Accident, Incident, Near Miss report. These will also be followed up as per 6.1.1

### **Incident Categories**

Below is a visual explanation of the difference between the terms, Incident, Accidents and Near miss, which is observed in determining the categories.



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### **Environmental Incidents**

Incidents, which have an effect or potential to impact on the environment include:

- I. an environmental emergency
- II. any emission which does not comply with the requirements of the IPPC
- III. any indication that environmental pollution has, or may have, taken place.
- IV. any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to land, or requiring an emergency response.

Plant equipment, gas distribution system malfunctions, which may effect plant operations, or cause any environmental incidents should also be immediately reported to the competent authority - ERA.

### **Health and Safety Incidents**

The HS incidents include incidents that cause injury or ill health. Any such accidents should be reported to the competent Authority OHSA.

### **Incident/ Accident Ranking**

Incident Ranking is used to evaluate the impacts of an HSE incident in the power plant and the local community. This rating supports the measurement of HSE performance.

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Ranking	Classification	Impact on the environment & Man
1	Minor	<ul style="list-style-type: none"> <li>• <b>No contamination, localised effects</b></li> <li>• Minor effect on air quality as evidenced by dust or odour complaint(s)</li> <li>• ELV breaches</li> <li>• A short period emission, which does not comply with IPPC requirement.</li> </ul>
2	Limited	<ul style="list-style-type: none"> <li>• <b>Simple contamination, localised effects of short duration</b></li> <li>• Local limited impact to water, land and air.</li> </ul>
3	Serious	<ul style="list-style-type: none"> <li>• <b>Simple contamination, widespread effects of extended duration</b></li> <li>• Significant effects on water quality</li> <li>• Major damage to an ecosystem</li> <li>• Significant reduction in amenity value</li> <li>• Significant Impact on man – Ill health and/or injury</li> </ul>
4	Very Serious	<ul style="list-style-type: none"> <li>• <b>Heavy contamination, localised effects of extended duration</b></li> </ul>
5	Catastrophic	<ul style="list-style-type: none"> <li>• <b>Very heavy contamination, widespread effects of extended duration</b></li> </ul>

#### 6.1.6. LEGAL COMPLIANCE

Legal Compliance is carried out on an annual basis through procedure IMSP 08-01-LC Legal Compliance & IMSR 08-01-LCR Legal Compliance Register. Any identified non-conformities or areas identified as requiring improvements will be treated similarly to 6.1.1.

## 7. INVESTIGATION, CORRECTIVE ACTIONS & PREVENTIVE ACTIONS

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### 7.1. INVESTIGATION

In all the above stated instances, when an NC is raised, investigation and corrective actions must follow.

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The process used for any kind of Risk or NC investigation is the **6σ tool** referred to as **8 Disciplines (8D)** of problem solving. The basic 8D report guides all process owners in executing a Plan-Do-Check-Act cycle during investigations. The below steps are followed:

**D0: Plan**—Plan for solving the problem and determine the prerequisites.

**D1: Mobilise a team**—Establish a team of people with product/process knowledge.

**D2: Define and describe the problem**—Specify the problem by identifying in quantifiable terms the who, what, where, when, why, how, and how many (5W2H) for the problem.

**D3: Develop interim containment plan** - Implement and verify interim actions: Define and implement containment actions to isolate the problem from any stakeholder.

**D4: Determine, identify, and verify root causes and escape points**—Identify all applicable causes that could explain why the problem occurred. Also identify why the problem was not noticed at the time it occurred. One can use the Cause and Effect diagrams to map causes against the effect or problem identified.

**D5: Choose and verify permanent corrections (PCs) for the problem/nonconformity**— Quantitatively confirm that the selected correction will resolve the problem.

**D6: Implement and validate corrective actions**—Define and implement the best corrective actions.

**D7: Take preventive measures**—Modify the management systems, operation systems, practices, and procedures to prevent recurrence of this and all similar problems.

**D8: Congratulate your team**—Recognize the collective efforts of the team. The team needs to be formally thanked by the organization.

The 8D report IMSF 14-01-8D&CAR - 8D and IMSF 14-01-8D&CAR - CAR , is a support tool to ensure systematic investigation and effective corrective action. The 8D should be used whenever deemed necessary.

In case of NCs/incidents raised within the DPS and which would require multiple operators within the site to investigate and resolve, reference must be made to CSMS 06 (SOP 180)- Incident Investigation

## 7.2. CORRECTIVE AND PREVENTIVE ACTIONS (CA & PA)

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The Process owners shall always identify CA & PA for each NC raised within their processes, responsibilities and operations. The choice of investigation tools depends on the complexity, source and severity of the NC, and is requested as deemed necessary by the QHSE Manager. Irrelevant of the investigation tool used, one must always fill out either of the documents below to ensure all the CAs & PAs agreed upon are recorded, followed up appropriately and verified for effectiveness:

- i. IMSP 14-01-8D&CAR - CAR for all kinds of NC s raised
- ii. IMSP 12-01-AP&R Audit Plan and Report for internal audits
- iii. Relevant Risk Assessment documents for all kind of risk assessments.
- iv. IMSP 14-02-AP Action Plan for multiple actions and/or extensive reports eg: External Audits, PFMEA, Inspections.

NCs will also be given an RPN. Any NC which is classified as a high risk will be given priority for resolution and escalation, as deemed necessary.

#### 7.2.1. PROCESS OWNER RESPONSIBILITIES ON RISK & NC IDENTIFICATION:

- Propose to respective superior / manager an immediate course of action to be taken in order to eliminate or contain consequences
- Analyse and identify the cause/s for the NC raised by using investigative tools
- Provide the details as recommended by the QHSE Manager. (in section 7.2.)
- Allocate the necessary resources to implement the CAs/PAs.
- The person(s) responsible for each item in each specific action plan shall carry out the planned activities using the resources available and shall inform the respective superior/manager and the QHSE Manager of any problems that may arise.

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## 8. VERIFICATION AND CLOSURE

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Verification shall be carried out by the QHSE Manager following the completion of pending items. All NCs will only be closed after the CAs & PAs are implemented, assessed for effectiveness and verified. The QHSE Manager shall monitor the status of pending issues and update IMSR 14-01-IPR Improvement Planning Register accordingly. The process owners shall be informed by the QHSE Manager of all pending issues and shall assess the effectiveness of the actions taken. Similarly risk will be reassessed after mitigation actions are verified.

## 9. REFERENCE DOCUMENTS

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IMSF 12-01-AP&R - Audit Plan and Report \*  
IMSR 14-01-IPR - Improvement Planning Register\*  
IMSF 14-01-8D&CAR - 8D Report\*  
IMSF 14-01-8D&CAR - CAR \*  
IMSF 14-02-AP - Action Plan\*  
CSMS 06 (SOP 180) - Incident investigation  
EMSF 02-01-AINR- Accident, Incident, Near Miss report  
HSF 01-02-SOR -Site Observation Report  
HSF 01-03-EDR Evacuation Drill Report  
IMSF 10-03-RMR Risk Management & Assessment Report

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\*Records must be kept