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C3.1: EMPLOYER'S WORKS INFORMATION

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1 Description of the works

1.1 Executive overview

- 1 Ankerlig Power Station is located near Atlantis in the Western Cape and comprises nine (9) diesel-fired open-cycle gas turbine units constructed in two phases, namely Ankerlig 1 comprising four units and Ankerlig 2 comprising five units.
- 2 The works comprise inspection, maintenance and remedial repair of the dirty water management infrastructure at Ankerlig Power Station.
- 3 The principal works include:
 - a. detailed condition assessment of the Ankerlig 1 and Ankerlig 2 Dirty Water Dams after dewatering;
 - b. assessment and repair of concrete deterioration, including spalling, delamination, exposed reinforcement and cracking;
 - c. assessment and repair of joint movement, joint sealants, waterstops and expansion-joint components;
 - d. repair and replacement of joint sealants within the fuel tank bunds;
 - e. replacement of sealant at the tank-to-foundation interfaces;
 - f. cleaning and degreasing of the dirty water dams; and
 - g. inspection, flushing and cleaning of the underground clean and dirty stormwater drainage systems.
- 4 The works apply to:
 - Ankerlig 1 Dirty Water Dam, with an approximate surface area of 4 152 m²;
 - Ankerlig 2 Dirty Water Dam, with an approximate surface area of 7 058 m²;
 - Gas 1 Tanks 1, 2 and 3 and their associated bunds;
 - OCGT Tanks A and B and their associated bunds; and
 - the associated underground stormwater drainage systems.
- 5 The following Ankerlig fuel tank and bund dimensions apply to the works:

Tank	Diameter	Bund size
Gas 1 Tank 1	15 050 mm	31 300 × 52 300 mm
Gas 1 Tank 2	15 050 mm	31 300 × 52 300 mm
Gas 1 Tank 3	21 300 mm	62 300 × 52 300 mm
OCGT Tank A	15 050 mm	31 300 × 52 300 mm
OCGT Tank B	15 050 mm	31 300 × 52 300 mm

1.2 Employer's objectives and purpose of the works

- 1 The Employer's objective is to restore the structural integrity, watertightness and operational performance of the dirty water management systems at Ankerlig Power Station.
- 2 The works are intended to address deterioration of concrete structures, joint failures and drainage deficiencies identified during visual inspections and to restore the condition and functionality of the dirty water dams, fuel containment infrastructure and associated drainage systems.
- 3 Ankerlig Power Station is located within an environmentally sensitive area underlain by aquifers from which the City of Cape Town abstracts raw water for potable water treatment. The integrity of the dirty

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water containment infrastructure is therefore important to reduce the risk of contaminated water or hydrocarbons entering the groundwater environment.

- 4 The purpose of the works is to:
- determine the condition of the Ankerlig 1 and Ankerlig 2 Dirty Water Dams following dewatering and detailed inspection;
 - identify and record defects affecting the dams and associated concrete structures;
 - repair concrete deterioration, cracks, reinforcement defects, joints and sealants identified within the scope;
 - restore the integrity of the fuel tank bunds and tank-to-foundation sealing systems;
 - inspect and clean the underground stormwater drainage systems; and
 - restore the relevant infrastructure so that it continues to perform its intended containment and drainage functions.

1.3 Interpretation and terminology

- The defined terms in the conditions of contract and Contract Data have the meanings given to them in the NEC3 Engineering and Construction Contract.
- The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AFC	Approved for Construction
AIA	Approved Inspection Authority
ANK	Ankerlig Power Station
CoC	Certificate of Compliance
DWS	Department of Water and Sanitation
EMP	Environmental Management Plan
H&S	Health and Safety
HIRA	Hazard Identification and Risk Assessment
HSE	Health, Safety and Environment
ITP	Inspection and Test Plan
MSDS	Material Safety Data Sheet, where this terminology appears in existing documents
NCR	Non-conformance Report
NDT	Non-destructive Testing
OCGT	Open-cycle Gas Turbine
OHS Act	Occupational Health and Safety Act 85 of 1993, as amended
O&M	Operations and Maintenance
PCD	Pollution-control Dam

Abbreviation	Meaning given to the abbreviation
PI	Professional Indemnity
PPE	Personal Protective Equipment
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
RFI	Request for Information
SANS	South African National Standard
SDS	Safety Data Sheet
SHE	Safety, Health and Environment
TDS	Technical Data Sheet
WIR	Works Inspection Request
WMS	Work Method Statement

2 Management and start up.

2.1 Management meetings

- 1 To support effective administration of the Contract, the Contractor attends and participates in management meetings convened by the Project Manager.
- 2 The purposes of management meetings are to:
 - a. coordinate progress and upcoming work,
 - b. review the Accepted Programme, constraints and recovery actions,
 - c. manage risks, Early Warnings and (where applicable) compensation events,
 - d. coordinate site access requirements, permits and interfaces,
 - e. review quality planning, inspections/hold points and close-out deliverables,
 - f. Confirm key contractual communication obligations.
- 3 The Contractor provides suitably experienced attendees with delegated authority to make decisions and commit resources as required.
- 4 Meeting records (minutes and/or an action register) are prepared by the person convening the meeting and circulated within five (5) Working Days. Meeting records do not substitute for formal notifications, instructions or other communications issued in accordance with Clause 13 of the Contract.
- 5 Meetings may be held on-site or via Microsoft Teams (or equivalent), depending on the nature of the discussion and the parties' availability.
- 6 The Project Manager may convene additional meetings where required to address technical, programme-related, commercial or interface matters.
- 7 The following meetings may be convened (frequency adjusted by the *Project Manager* to suit the risk and stage of the Works):

2.1.1 Project kick-off meeting

Held before commencement of site works to confirm key people, communication routes, programme approach, access/permit constraints, sequencing expectations, quality requirements and key hold points:

Interval	Location	Attendance by:
Once-off meeting	MSTEAMS or on-site	<i>Project Manager, Contractor, Project Supervisor, Project Engineer, Power Station Manager and Others as required</i>

2.1.1.1 Implementation meetings for specific progress/QC, and feedback

- 1 The implementation meeting is held between the Contractor and the Employer's implementation support team, to report on implementation progress and review any risks, issues and Employer actions that need to be resolved in order to ensure smooth implementation of the Project.
- 2 The Contractor's QC representatives provide reports from each meeting to the Employer's Project Engineer.
- 3 This report will cover:
 - a. Scheduled QC inspections for the period identified in the meeting.
 - b. Any new QC-related issues identified since the last report, their status and action plan for resolution.
 - c. Status and progress on previously reported quality issues.

4 Implementation meetings format:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	As required	MSTEAMS or on-site	<i>Project Manager, Contractor, Project Supervisor, Quantity Surveyor and Project Engineer</i>
Overall contract progress and feedback	Minimum Bi-weekly or as required by the <i>Project Manager</i> .	MSTEAMS or on-site	<i>Project Manager, Contractor, Supervisor, and Project Engineer</i>
Site progress meetings	Daily	on-site	<i>Contractor, Supervisor, and relevant Engineer when required</i>

2.1.2 Meetings of a specialist nature

- 1 The Project Manager (or the Contractor, subject to the Project Manager being notified) may convene specialist meetings to address:
 - a. design review/clarifications,
 - b. temporary works/access / lifting coordination,
 - c. interface management with Others,
 - d. QCP/ITP reviews and technical compliance matters,
 - e. safety audits and technical risk discussions.

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- 2 Attendance, frequency and location are fit-for-purpose and recorded. Records are submitted to the *Project Manager* within five (5) Working Days after the meeting.

2.1.3 Post-implementation meeting for project feedback and review

- 1 A once-off close-out meeting may be held (if required) to review outstanding punch-list items, documentation, warranties/guarantees, lessons learned and final handover requirements:

Interval	Location	Attendance by:
Once-off	MSTEAMS or on-site	<i>Project Manager, Contractor, Project Supervisor, Project Engineer, Power Station Manager and Others as required</i>

2.2 Documentation control

- 1 The Contractor establishes and maintains a structured document-management system for all contract documentation throughout the contract and until submission of the final records required by this Works Information.
- 2 The Contractor maintains a current document register covering all submissions and records required by this Works Information. The register identifies, as a minimum:
- document title and number;
 - affected asset or work area at Ankerlig Power Station;
 - revision;
 - date submitted;
 - purpose or status of submission;
 - whether acceptance or another response is required;
 - response received and date; and
 - current document status.
- 3 All contractual communications, Contractor design submissions, inspection records and technical records are uniquely numbered, dated, revision-controlled and communicated in a form which can be read, copied and recorded.
- 4 The document-management system provides traceability, revision control, document-status control, transmittal records, evidence of receipt and identification of superseded documents.
- 5 The Contractor complies with the following Employer document-control requirements where applicable to the documents being produced:
- 240-86973501 – Engineering Drawing Standard – Common Requirements;
 - 240-54179170 – Classification and Designation of Technical Documentation; and
 - 32-644 – Documentation Management Standard.
- 6 Documentation:
- is prepared in South African English using SI units;
 - is legible and professionally prepared;
 - is signed by authorised or appropriately qualified persons where required;
 - identifies the contract number and affected asset or work area at Ankerlig Power Station;

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- e. is submitted without password protection, write protection or other access restrictions; and
 - f. is submitted in searchable PDF format unless an editable or native format is required by this Works Information.
- 7 Editable or native formats are provided for programmes, drawings, registers, schedules, spreadsheets, as-built information and other records for which the Employer requires the source file for subsequent use.
- 8 Each document submission is accompanied by a uniquely numbered transmittal identifying:
- a. the contract number and title;
 - b. affected asset or work area at Ankerlig Power Station;
 - c. document title and number;
 - d. revision;
 - e. date of issue;
 - f. purpose or status of issue; and
 - g. whether acceptance or another response is required.
- 9 A contractual communication identifies, as applicable:
- a. the contract number and title;
 - b. the Contractor's unique communication reference;
 - c. the relevant previous communication reference;
 - d. the relevant clause of the conditions of contract; and
 - e. whether a reply is required.
- 10 A notification which the conditions of contract require is communicated separately from other communications in accordance with clause 13.7.
- 11 Formal contractual communications issued electronically are transmitted as controlled PDF documents or through the Employer's nominated contract-management system. The communication is not issued solely in the body of an email.
- 12 Communications and submissions are addressed to the person required by the conditions of contract or this Works Information. Copying another Employer representative does not transfer or alter the contractual function of the Project Manager or Supervisor.
- 13 Meeting minutes, informal comments, discussions and technical correspondence do not replace an instruction, notification, acceptance, certificate or other communication required by the conditions of contract.
- 14 The Contractor retains evidence of transmission and receipt of its submissions and communications.
- 15 Contractor design submissions are controlled in accordance with Section 3.3. Where Project Manager acceptance of Contractor design is required, the Contractor does not proceed with the relevant work until that design has been accepted in accordance with the conditions of contract.
- 16 Before Completion, the Contractor submits a complete indexed set of the final records required by this Works Information and the applicable Technical Annexure for that Section.
- 17 Unless otherwise stated in this Works Information, one complete electronic set of final records is provided for the works. Where the Employer requires a hardcopy data book, one complete indexed

hardcopy set is also provided, clearly identified with the contract number, contract title, Ankerlig Power Station and revision.

2.3 Communication Requirements

- 1 All communications from the Contractor required under the Contract are addressed to the Project Manager in accordance with the NEC ECC.
- 2 Every contractual communication (including notifications, replies, submissions and requests) clearly states:
 - a. the Employer's contract number;;
 - b. the contract title;
 - c. any relevant previous reference(s) (e.g., the Project Manager's reference being replied to);
 - d. the ECC clause under which the communication is issued (where applicable);
 - e. whether a reply is required and by when (where applicable); and
 - f. the Contractor's unique communication reference number..
- 3 In accordance with ECC clause 13.7, each notification/communication deals with one issue only. Separate issues are issued as separate communications.
- 4 All document deliverables transmitted for review, acceptance, record or information are accompanied by:
 - a. formal covering communication; and
 - b. a document transmittal listing each document title/number, revision, status and purpose of issue.
- 5 Where hardcopy deliverables are required by the Works Information, each hardcopy submission is accompanied by a hardcopy copy of the covering communication and/or document transmittal.
- 6 Where communications are submitted electronically:
 - a. The letter title is reflected in the email subject line.
 - b. One letter/communication per email (with its attachments and transmittal); and
 - c. contractual communications are attached as controlled documents (PDF), not issued only in the email body.
- 7 Copying additional recipients does not change the requirement that contractual communications are addressed to the Project Manager.

2.4 Health and safety risk management

- 1 The Contractor complies with:
 - a. the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and applicable regulations;
 - b. the Employer's occupational health and safety requirements issued as part of the contract;
 - c. applicable Power Station safety rules and procedures;
 - d. the safety requirements stated in this Works Information and the applicable Employer health and safety requirements; and

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- 2 The Contractor remains responsible for the health and safety of its employees, Subcontractors and other persons affected by the manner in which it Provides the Works.
- 3 Before commencing physical work at Ankerlig Power Station, the Contractor:
 - a. submits the required project-specific health and safety plan and supporting documentation for review in accordance with the Employer's occupational health and safety requirements;
 - b. establishes and maintains the required health and safety file;
 - c. provides the statutory appointments applicable to the work;
 - d. provides evidence of a valid Letter of Good Standing where required by law;
 - e. provides medical certificates of fitness applicable to the work to be performed;
 - f. completes the required Site induction and access processes;
 - g. completes any agreement required in terms of section 37(2) of the Occupational Health and Safety Act; and
 - h. obtains the permits, authorisations or work-area releases required before commencing the relevant activity.
- 4 The Contractor provides competent health and safety resources appropriate to the nature, extent and risk of the works.
- 5 The Contractor prepares, maintains and implements task-specific risk assessments, Method Statements, safe work procedures and emergency arrangements for the activities it performs.
- 6 The Contractor reviews and updates its health and safety documentation when:
 - a. the nature or sequence of the work changes;
 - b. Site conditions or work-area conditions change;
 - c. additional hazards are identified;
 - d. an incident, near miss or non-conformance identifies the need for additional controls; or
 - e. an applicable statutory or Site requirement requires revision.
- 7 Without limiting the Contractor's obligation to identify and manage all hazards associated with its work, the Contractor's health and safety planning addresses the risks associated with the applicable works, including:
 - a. dewatering and work in or adjacent to pollution-control dams and containment areas;
 - b. contaminated water, sludge, hydrocarbons and other potentially contaminated materials;
 - c. cleaning and degreasing activities;
 - d. concrete breaking, cutting, drilling, grinding and repair activities;
 - e. application and handling of repair mortars, sealants, primers, epoxy resins and other chemical products used in the works;;
 - f. work adjacent to fuel-storage and fuel-containment infrastructure;
 - g. underground stormwater drainage inspection and flushing activities;
 - h. movement of construction vehicles, Equipment and Plant within operating Power Stations;
 - i. lifting and handling activities required to Provide the Works;
 - j. temporary works and access arrangements;
 - k. interaction with the Employer, Others and operating plant; and
 - l. weather conditions affecting the safe execution of the work.

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- 8 The Contractor provides and maintains the PPE, safety Equipment, emergency Equipment, barricading, signage and other controls required by its risk assessments, applicable law and the Employer's Site requirements..

2.4.1 Audits, inspections and station audits

- 1 The Contractor conducts health and safety inspections and internal audits at intervals appropriate to the work being performed and retains records of the findings and corrective actions.
- 2 The Employer may inspect or audit the Contractor's compliance with the contractual and statutory health and safety requirements.
- 3 The Contractor provides reasonable access to the relevant work areas, health and safety records and personnel for these inspections and audits.
- 4 The Contractor corrects identified non-conformances within the period required by the applicable statutory requirement or the Employer's health and safety process.
- 5 The Contractor's responsibility for health and safety is not reduced by an inspection, audit, review or comment by the Employer.

2.4.2 Minimum access prerequisites and induction

- 1 Minimum requirements for Contractor personnel to gain access to Ankerlig Power Station include, but are not limited to:
- a. valid medical fitness certificate;
 - b. police clearance (SAPS or accredited AFIS-linked provider) not older than three (3) months;
 - c. identification document (RSA ID or equivalent);
 - d. valid driver's licence (where applicable);
 - e. adherence to Eskom Life-Saving Rules;
 - f. applicable risk-based PPE;
 - g. valid letter of good standing at all times (COIDA or equivalent). Access is denied if invalid.
 - h. where a Contractor/supplier/consultant is working alone and is not eligible to register with the compensation fund:
 - i. a member benefit statement confirming insurance cover, including life and disability, with a minimum fund of R500,000.
- 2 Induction is conducted only after the above documents have been submitted and accepted by the Employer. The Contractor allows approximately two (2) hours for induction (unless otherwise advised by the Employer).

2.4.3 Daily control requirements (site discipline)

- 1 The Contractor signs on to the workers' register each morning and signs off each afternoon.
- 2 A Responsible Person (RP) is appointed by the site and is responsible for the work area. The RP controls access to the work area, confirms the area remains safe for work, and verifies that all personnel sign in and out.
- 3 The Contractor notifies the RP of the daily work plan and intended work fronts before commencing work for the day.

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- 4 The Contractor conducts a toolbox talk each morning before commencing work, covering at least: the day's tasks, hazards, controls, interfaces, exclusion zones, dropped-object controls, weather considerations and lessons learned from the previous day.
- 5 Where required by station arrangements, the Contractor provides a representative to attend daily morning coordination meetings.

2.4.4 Key performance indicators and reporting (HSE)

The *Contractor* monitors, manages and reports health and safety performance for the duration of the Contract. As a minimum, the *Contractor*:

- 1 maintains a Health and Safety File and ensures compliance with the approved health and safety plan, the Eskom OHS specification and applicable legislation;
- 2 maintains good housekeeping in all working areas and site establishment areas;
- 3 implements and monitors a near-miss reporting programme;
- 4 implements Behavioural Safety Observations (BSO) and Planned Job Observations (PJO) as required by the OHS Specification/Requirements;
- 5 targets a zero-harm outcome and maintains performance within the Employer's injury tolerance levels (including LTI tolerance) as defined in the OHS Specification/Requirements;
- 6 reports all incidents immediately or before the end of the shift in which the incident occurred;
- 7 completes incident investigations within seven (7) days of the incident (unless otherwise required by the Employer's procedures);
- 8 Closes incident investigation recommendations within the timeframes stated in the investigation report.
- 9 Closes audit findings and non-conformances within the timeframes stated by the Employer's procedure and/or audit report.
- 10 The Employer monitors these KPIs through audits and site inspections.

2.4.5 Contract completion and sign-off (HSE close-out)

- 1 Upon completion of the Works, the Parties may conduct a final close-out meeting to identify and address any remaining HSE gaps before contract close-out.
- 2 Before Completion (or as otherwise instructed), the Contractor:
 - a. closes all incidents, investigations, non-conformances and audit findings relevant to the Works;
 - b. cleans all site establishment areas and work areas and leaves them in a safe, orderly condition;
 - c. submits final safety statistics and the completed safety file to the Employer's BU Safety department for close-out and filing; and
 - d. completes the required close-out report (including Annexure D form as per 32-726, where applicable to this Contract).

2.5 Environmental constraints and management

- 1 The Contractor includes in its rates and Prices all costs required to comply with the environmental requirements stated in this Works Information, applicable law and the environmental requirements applicable at Ankerlig Power Station.

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- 2 The Contractor recognises that the works are carried out within an environmentally sensitive operating Power Station and within an area underlain by aquifers requiring protection from contamination. The Contractor manages its activities in accordance with environmentally sound principles and the environmental management system requirements applicable at Ankerlig Power Station
- 3 The Contractor complies with all applicable national, provincial and municipal environmental legislation, regulations and by-laws, including, as applicable:
 - a. National Environmental Management Act, 1998 (Act 107 of 1998);
 - b. National Environmental Management: Waste Act, 2008 (Act 59 of 2008);
 - c. National Water Act, 1998 (Act 36 of 1998);
 - d. applicable norms and standards issued in terms of the National Environmental Management: Waste Act; and
 - e. applicable Employer environmental procedures, policies and Site requirements.
- 4 The Contractor applies the environmental duty of care and takes reasonable measures to prevent pollution, environmental degradation and unnecessary disturbance resulting from its activities.
- 5 Any environmental incident, spill, uncontrolled discharge or event which has caused or may cause an environmental impact is immediately reported to the Project Manager and the applicable Site environmental representative. The Contractor implements the applicable Site incident-response and emergency requirements.
- 6 The Contractor maintains and implements an Environmental Policy and an Environmental Management Plan appropriate to the works. The Environmental Management Plan is submitted to the Project Manager within fourteen (14) calendar days after the Contract Date.
- 7 The Contractor submits an activity-specific environmental Method Statement to the Project Manager for acceptance not less than fourteen (14) calendar days before commencing an activity which presents a material environmental risk. The Method Statement addresses, as applicable:
 - a. Site establishment and layout;
 - b. pollution-prevention measures;
 - c. waste and contaminated-water management;
 - d. hazardous substances and chemicals;
 - e. spill prevention and response;
 - f. incident and emergency management;
 - g. dust control; and
 - h. rehabilitation and reinstatement.
- 8 The Contractor demarcates its Site establishment, laydown, storage and working areas and confines its activities to the areas made available for the works. On completion, temporary facilities, waste, surplus materials and contamination resulting from the Contractor's activities are removed and affected areas are reinstated.
- 9 Fuel-storage facilities provided by the Contractor are bunded to at least 110% of the applicable storage capacity. Fuel-dispensing areas and other temporary areas with a pollution potential are provided with an impermeable surface and appropriate containment measures.

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- 10 Cleaning, servicing, maintenance and repair of the Contractor's vehicles are carried out off Site unless a specifically designated facility has been made available or accepted for this purpose.
- 11 The Contractor provides suitable enclosed temporary sanitation facilities where Site facilities are not made available and manages these facilities so that they do not cause pollution or nuisance.
- 12 A current Safety Data Sheet is available for each chemical, hazardous substance or potentially hazardous material brought onto Site. Chemicals, fuels, oils, sealants, resins, coatings and other potentially polluting materials are stored and handled in accordance with the Safety Data Sheet, manufacturer requirements and applicable Site requirements.
- 13 The Contractor protects groundwater and the aquifer environment beneath and adjacent to Ankerlig Power Station, together with rivers, streams, wetlands, drainage systems and watercourses, against direct or indirect pollution arising from its activities..
- 14 Garbage, sewage, cementitious material, oils, fuels, chemicals, silt, contaminated runoff, wastewater, sludge and other pollutants are not discharged into the environment, clean stormwater system or watercourse.
- 15 Contaminated water, sludge, wash water and flushing effluent arising from the dam, containment and drainage works are contained, handled and disposed of in accordance with the accepted environmental Method Statement and the applicable Site requirements.
- 16 The Contractor does not work within a river flood line, stream, watercourse or wetland unless the work is required to Provide the Works, the proposed environmental controls have been accepted and any statutory authorisation required by applicable law has been obtained.
- 17 Waste generated by the Contractor is minimised, separated and managed according to the applicable waste stream. This includes, as applicable, general waste, recyclable waste, construction rubble, scrap metal, oils and grease, contaminated material and hazardous waste.
- 18 Waste is stored in suitable labelled containers or designated temporary storage areas which prevent leakage, dispersion and access by animals. Eating areas used by Contractor personnel are provided with suitable waste bins.
- 19 The Contractor does not bury, dump or burn waste, vegetation, litter or refuse on Site.
- 20 Waste requiring off-Site disposal is transported and disposed of at a facility authorised to receive the relevant waste stream. The Contractor provides the Project Manager with the applicable waste manifests, disposal certificates or other proof of lawful disposal.
- 21 The removal, damage or disturbance of indigenous flora outside areas necessarily affected by the works is prohibited.
- 22 The Contractor protects fauna occurring within or adjacent to the Site. Hunting, trapping, snaring, poisoning, shooting, nest disturbance, egg collecting and feeding of wild animals are prohibited. Domestic pets and livestock belonging to Contractor personnel are not permitted on Site.
- 23 Pesticides or herbicides are not used on Site without the Project Manager's acceptance and compliance with the applicable environmental requirements.
- 24 The Contractor implements effective dust-control measures for excavation, cutting, grinding, stockpiling, vehicle movement and other dust-generating activities.

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- 25 The Contractor takes reasonable precautions to prevent fires resulting from its activities and complies with applicable Power Station fire-prevention and hot-work requirements.
- 26 The Contractor ensures that its employees and Subcontractors are informed of the environmental requirements applicable to their work and uses appropriate briefings, notices and signage to reinforce these requirements.
- 27 Environmental records required by applicable law, the Employer's Site requirements or this Works Information, including waste-disposal records and environmental incident records, are retained and included in the final records for the works where applicable.
- 28 Acceptance of an environmental Method Statement, or any environmental inspection or review by the Employer, does not reduce the Contractor's responsibility for complying with the environmental requirements of the contract.

2.6 Quality assurance requirements

- 1 Quality management for the Works is under Eskom Supplier Quality Management Specification 240-105658000 (QM-58).

2.6.1 Quality Assurance Requirements

- 1 The *Contractor* complies with the current version of the ISO 9001:2015 Quality Management System requirements.
- 2 The *Contractor* defines the level of QA or inspection imposed on his subcontractors and suppliers.
- 3 The *Contractor* prepares and submits fitment/installation procedures with quality check sheets as well as the Quality Control Plan. Quality acceptance criteria are included in these procedures.
- 4 All technical design and implementation documentation and QCPs are submitted to the *Employer* for acceptance fourteen (14) days before the commencement of any Works or inspections, allowing the *Employer* the opportunity to provide the necessary intervention points if required.
- 5 The *Contractor* is made aware of the requirement that all documents or designs submitted for review to the *Project Manager* for acceptance require a process of review.
- 6 The *Contractor* documents all inspections as part of the quality assurance and control procedures. These documents are handed to the *Employer* as records.
- 7 Submission of all quality requirements, to comply with section 3.7.1, Post Contract Award as stipulated in the Supplier Quality Management Specification 240-105658000, is made to the *Employer* for acceptance at least thirty (30) days before the execution of the project.
- 8 On completion of the project, the *Contractor* hands in all data books (Packs) before the Completion Certificate is issued.
- 9 Where the Contractor maintains an official Quality Management System, details of the level of the Contractor's self-certification procedures applicable to supplied Plant and Materials are submitted to the Project Manager for acceptance before commencement of the relevant work.
- 10 Where no certified Quality Management System exists, the *Contractor* plans all quality management procedures, carries out all quality control testing as required and makes the resulting records available to the Supervisor for inspection and review.

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- 11 The Contractor submits full details of the proposed quality management system and procedures to the Project Manager for acceptance. The Supervisor has access to the relevant quality records, Site trials and tests for the purposes of inspection and testing under the contract.
- 12 The *Contractor* ensures that monitoring and measuring Equipment are calibrated and verified to confirm serviceability before usage, and records of such are kept on Site.

2.6.2 Quality Control Plan

The Quality Control Plan manages the overall quality of the project's main activities and milestones. It lists detailed activities in order of execution where each activity is described and references the associated work packages or specifications with witness, hold and verification points.

The *Contractor* is therefore required to ensure QCPs meet the following requirements as a minimum:

- 1 The *Contractor* defines the level of QC or inspection imposed on his subcontractors and suppliers.
- 2 The QCP provides for signatures or records confirming completion by the Contractor and the applicable inspection, witnessing or Hold Point release by the Employer..
- 3 The *Contractor* has the necessary Equipment and qualified staff to carry out the quality control required to ensure compliance with the specification.
- 4 The *Contractor* ensures that a complete Quality Control Plan (QCP), aligned with the Method Statement and programme for executing the work, is submitted to the *Project Manager* and *Supervisor* for review and acceptance before the Works can commence.
- 5 The programming of inspections, Hold Points and Witness Points is agreed between the *Employer* and the *Contractor* before undertaking any of the Works.
- 6 During reviews of the QCP, the *Employer* provides the necessary intervention points, if required.
- 7 The Quality Control Plans and Inspection and Test Plans incorporate the inspection, testing and quality requirements stated in this Works Information and the Manufacturer's requirements for the accepted materials and proprietary systems.
- 8 Repair materials and proprietary systems are submitted before use with the applicable Technical Data Sheets, Safety Data Sheets, Manufacturer's instructions, compatibility information and compliance certificates.
- 9 The Contractor maintains traceable quality records appropriate to the work performed, including, where applicable:
 - a. material and product batch numbers;
 - b. delivery and material certificates;
 - c. substrate and surface-preparation records;
 - d. mixing and application records;
 - e. ambient and substrate conditions;
 - f. curing records;
 - g. inspection and test results;
 - h. calibration certificates;
 - i. photographs;
 - j. non-conformance and corrective-action records; and

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- k. Manufacturer or specialist applicator records required by the Works Information.
- 10 Work which will be covered or become inaccessible is not covered until the Supervisor has been given the required notice and reasonable opportunity to inspect the work.
- 11 The Contractor gives the Supervisor at least five (5) Working Days' notice of a planned Witness Point or Hold Point unless another notice period is stated in the accepted Quality Control Plan or Inspection and Test Plan.
- 12 The Contractor does not proceed beyond a Hold Point until the required inspection or test has been completed and the Supervisor has confirmed release of the Hold Point.
- 13 Without limiting the requirements of this Works Information, the quality controls applicable to the works include:
- a. condition assessment, inspection, NDT and Defect Mapping of the pollution-control dams and associated structures;
 - b. preparation and repair of concrete, reinforcement, cracks, joints and sealant systems;
 - c. inspection and flushing of underground stormwater drainage systems;
 - d. inspection and testing of fuel-containment repairs;
 - e. concrete strength testing;
 - f. coating dry-film-thickness measurements; and
 - g. Manufacturer compliance certificates.
- 14 Measuring, inspection and test Equipment used to demonstrate compliance is suitable for its intended purpose and has current calibration traceable to recognised standards. Calibration records are made available to the Supervisor.
- 15 The quality requirements apply equally to work carried out outside the Site where Plant and Materials, testing, preparation or other work forming part of the works is undertaken.
- 16 The Contractor gives the Project Manager and Supervisor reasonable access to the Contractor's and its Subcontractors' relevant quality records and to inspections and tests associated with the works.
- 17 The Contractor submits quality and test records progressively as the works proceed and does not defer compilation of these records until Completion.
- 18 Non-conforming work or Plant and Materials is identified, controlled and recorded. The Contractor records the corrective action taken and closes the non-conformance before the affected work is incorporated into or covered by subsequent work.
- 19 The complete quality records for the works, including required test results, material certificates, inspection records, non-conformance close-out records, warranties, guarantees and other quality documentation required by this Works Information, form part of the final records required before Completion.
- 20 Inspection, testing, witnessing, review or release of a Hold Point by the Supervisor, and acceptance of a submission by the Project Manager, does not reduce the Contractor's responsibility to Provide the Works in accordance with the contract

2.7 Programming constraints

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- 1 The Contractor prepares, submits and maintains programmes in accordance with clauses 31 and 32 of the conditions of contract and the requirements stated in the Contract Data.
- 2 The programme is prepared using Microsoft Project in native .mpp format and is accompanied by a PDF copy.
- 3 Each programme submitted for acceptance:
 - a. shows the starting date, access dates, Key Dates, the Completion Date for the whole of the works;
 - b. shows the order, timing, duration and logic of the activities necessary to Provide the Works;
 - c. identifies the critical path, available float and time risk allowances;
 - d. includes, as applicable:
 - mobilisation, Site access, induction, permits and Site establishment;
 - release of each work area by the Employer;
 - dewatering and residual-water management activities applicable to the relevant work area;
 - cleaning and degreasing required before inspection;
 - detailed condition assessments, NDT, Defect Mapping and preparation of the required reports;
 - submission, acceptance and, where required, resubmission of Contractor design, proposed remedial measures, Method Statements, material submissions, Quality Control Plans and Inspection and Test Plans;
 - procurement and delivery of Plant and Materials;
 - inspection points, Witness Points and Hold Points;
 - concrete, reinforcement, crack, joint and sealant repairs;
 - fuel-containment and tank-to-foundation interface repairs;
 - inspection, flushing and re-inspection of underground stormwater drainage systems;
 - curing periods and restrictions on loading, immersion or return to service;
 - inspections and testing;
 - correction of Defects;
 - preparation and submission of professional reports and required sign-off;
 - preparation of as-built and Completion documentation;
 - reinstatement and handover; and
 - Completion of the Works;
 - e. shows the dates by which the Contractor requires:
 - access to each relevant part of the Site;
 - operational release of each work area;
 - information from the Employer;
 - attendance by the Supervisor at planned Hold Points and Witness Points;
 - acceptance or other decisions from the Project Manager; and
 - work to be carried out by the Employer or Others;

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- f. allows for the period for reply stated in the Contract Data for submissions requiring acceptance or another contractual response;
 - g. shows procurement lead times, delivery periods and Manufacturer-required application, curing and testing periods for the proposed repair, sealant, concrete and coating systems;
 - h. shows the interfaces between the works and ongoing Power Station operations; and
 - i. shows the principal resources and Contractor's Equipment required for significant activities at the relevant Ankerlig 1 or Ankerlig 2 work area.
- 4 The Contractor submits the first programme for acceptance within the period stated in the Contract Data.
- 5 The Contractor submits revised programmes at intervals no longer than the period stated in the Contract Data and whenever otherwise required by the conditions of contract.
- 6 Each revised programme:
 - a. shows actual progress achieved;
 - b. identifies work completed and work remaining;
 - c. shows the effect of implemented compensation events;
 - d. identifies changes to logic, sequence, durations or resources;
 - e. shows the current forecast Completion Date for the whole of the works;
 - f. identifies delays, constraints and proposed recovery measures; and
 - g. shows the current status of activities to be carried out by the Employer and Others.
- 7 The Contractor provides an updated short-term look-ahead programme at a progress meeting where required by the Project Manager. The look-ahead programme does not replace a programme required under clause 32.
- 8 No permanent repair to a pollution-control dam commences until the condition-assessment report and proposed remedial measures required by this Works Information have been accepted in accordance with this Works Information.
- 9 The Contractor does not assume that the Ankerlig 1 and Ankerlig 2 Dirty Water Dams, fuel-containment areas, drainage systems or other work areas will be available simultaneously.
- 10 Work which materially affects Power Station operations, Site access, fuel-containment arrangements, environmental controls, drainage systems, permits or isolations is coordinated with the Employer and shown on the Accepted Programme before the affected activity commences.
- 11 The programme includes the Manufacturer-required curing, protection and return-to-service periods applicable to the Plant and Materials used in the works.
- 12 Acceptance of a programme does not constitute acceptance of Contractor design, a Method Statement, proposed remedial measures or a change to the Works Information and does not reduce the Contractor's responsibility to Provide the Works

2.8 Contractor's management, supervision and key people

- 1 The Contractor ensures that the works are managed and supervised by competent and suitably experienced personnel appropriate to the nature and extent of the works.
- 2 Within two (2) weeks after the Contract Date, the Contractor submits an organogram showing:

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- a. the key people named in the Contract Data;
 - b. the persons responsible for overall contract management and Site supervision;
 - c. the persons responsible for health and safety, quality and environmental management;
 - d. lines of authority and communication within the Contractor's organisation; and
 - e. reporting and coordination arrangements with Subcontractors.
- 3 The Contractor provides a competent Site Supervisor at Ankerlig Power Station whenever physical work is being carried out.
- 4 The Site Supervisor:
- a. has sufficient authority to direct and coordinate the Contractor's activities on Site;
 - b. is familiar with the Works Information, Accepted Programme and Site requirements;
 - c. coordinates the Contractor's people, Subcontractors, Plant and Materials and Contractor's Equipment; and
 - d. acts as the Contractor's day-to-day Site contact for the Project Manager and Supervisor.
- 5 Where the Contractor carries out physical work simultaneously in more than one Ankerlig work area, the Contractor provides sufficient supervision for each active work area.
- 6 The Contractor ensures that its management and supervisory personnel are available for meetings, inspections, testing and other activities relevant to their responsibilities.
- 7 Replacement of a key person named in the Contract Data is dealt with in accordance with clause 24.1 of the conditions of contract.
- 8 The Contractor notifies the Project Manager before changing a person carrying out a principal Site-management or supervisory role and provides the name, role and relevant experience of the replacement.
- 9 The Contractor maintains adequate management and supervision throughout the execution of the works

2.9 Invoicing and payment

- 1 Within one week of receiving a payment certificate from the Project Manager in terms of clause 51.1, the Contractor submits a tax invoice to the Employer, showing the amount due for payment equal to that stated in the Project Manager's payment certificate.
- 2 The Project Manager is to be copied in on all electronic invoices emailed.
- 3 Failure to submit the invoice to the correct address could result in payment delays.
- 4 The Contractor's Tax Invoices comply with the requirements as stated in clause Z7 of the Contract Data
- 5 Invoices are submitted electronically to:
- Local Eskom Invoices - invoiceseskomlocal@eskom.co.za
 - Foreign Eskom Invoices - invoiceseskomforeign@eskom.co.za
- 6 The following details are required when submitting invoices and additional data:
- a. The subject line of your email should only contain your vendor number.
 - b. Each PDF invoice should be named only with your invoice number.

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- c. All electronic invoices are sent in PDF format only.
 - d. Attach the proof of delivery to your invoice.
 - e. Where applicable, supporting documents are attached to the scanned PDF invoice as one attachment.
 - f. A copy of the signed assessment certificate
 - g. CPA calculation sheet
 - h. Retention Certificate, which is a retention invoice.
 - i. Any other appropriate documents, e.g.
 - i. For shipping invoices, please ensure the following documents are attached.
 - ii. Invoice (this should only reflect the shipping cost)
 - iii. Commercial invoice
 - iv. Delivery note
 - v. Your shipping cost calculation is relevant to that invoice—not a generic one (the amount of the shipping cost calculation has to balance with the amount on the invoice).
 - vi. Forwarding agent's invoice
 - vii. The customs document.
 - j. Please do not attach unnecessary documents, as this will make the file too large.
- 7 Other requirements:
- a. For foreign invoices, suppliers will still be required to physically deliver hard copies of original documents to the respective Document Management centres, even though the invoices have been submitted electronically.
 - b. Ensure compliance with the tax requirements for electronically submitting invoices.
 - c. Each PDF should contain one credit note, one debit note, or one credit note only. More than one invoice can be submitted per email.
 - d. Any CPA-applicable invoices are invoiced separately, so that if there are issues with the CPA, the rest of the invoices can be paid while the CPA issues are resolved.
- 8 Include the following information on the Invoice:
- e. Name and address of the Contractor and the Project Manager
 - f. The contract number and title
 - g. Contractor's VAT registration number
 - h. The Employer's VAT registration number 4740101508
 - i. The total amount invoiced, excluding VAT, the VAT and the invoiced amount including VAT
 - j. Contractor's company registration number, if applicable
 - k. Contractor's banking details
 - l. Name and address of the recipient
 - m. Tax invoice number and date of issue
 - n. Description of goods/services provided
 - o. Quantity or volume of goods/services
 - p. Period time for which the Tax Invoice is being rendered
 - q. Relevant line-item number

- r. State whether the value-added tax is included or excluded

2.10 Insurance provided by the *Employer*

Insurance provided by the Employer is as stated in clause Z13 of the Contract Data, including Insurance Table B.

2.11 Contract change management

Contract change management is carried out strictly in accordance with Core Clause 6 (Compensation events) and Core Clause 16 (Early warning). In addition, the following applies:

- 1 The Project Manager maintains and issues updates to the Early Warning Register / Risk Register and records compensation event matters for contract administration and tracking.
- 2 Either Party gives an Early Warning as soon as it becomes aware of any matter which could increase the total of the Prices, delay Completion, delay meeting a Key Date, or impair the performance of the Works in use. Early Warning matters are discussed and managed through the Early Warning/risk process.
- 3 Compensation Events are notified by the Party required to do so under the Contract. Notifications are issued as formal communications in accordance with Clause 13.
- 4 Quotations (Clause 62) For each Compensation Event where a quotation is required:
 - a. The *Contractor* submits a formal quotation within the required time, clearly stating:
 - i. The event reference and description.
 - ii. the forecast time effect, including the impact on the Accepted Programme;
 - iii. the forecast cost effect (including supporting records and assumptions); and
 - iv. any supporting information required by the *Project Manager*.
 - b. The *Project Manager* assesses and responds in writing in accordance with Clause 62.
- 5 Any change affecting the Works Information, the Prices/Bill of Quantities, or the Accepted programme is managed through the ECC processes and must be formally recorded through the relevant NEC communications and actions. The Contractor does not implement changes that alter the Scope/Works Information unless and until the Project Manager has instructed the applicable change or otherwise acted in accordance with the conditions of contract.
- 6 The Contractor notifies the Project Manager in writing of any proposed subcontractor changes and provides the reason and any potential impact on quality, programme, safety and interfaces. The Contractor does not implement such changes where the Contract requires acceptance, unless accepted by the Project Manager.
- 7 Any changes to delivery dates, milestones or sequencing arising from Early Warnings and/or Compensation Events are reflected in the next programme submission and, where applicable, in the revised programme submitted with a quotation.

2.12 Provision of bonds and guarantees

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No performance bond or other contract security is required unless stated otherwise in the Contract Data. Product warranties, Manufacturer guarantees and other quality-related guarantees required by the Works Information are not contract securities and are provided as part of the applicable quality and Completion documentation.

2.13 Records of Defined Cost, payments & assessments of compensation events to be kept by the Contractor

The *Contractor* keeps and maintains proper records of Defined Cost, payments and assessments of Compensation Events, in accordance with **Clause 52.2** of the Conditions of Contract.

The following records are kept as a minimum:

Type of Cost	Type of Record
People employed by the <i>Contractor</i> (labour)	Signed timesheets, payroll reports, payslips
People employed by Subcontractors (labour)	Signed timesheets, certified payroll reports from Subcontractors
Equipment owned or hired	Equipment hire agreements, delivery notes, usage logs, plant daily reports and actual paid invoices
Plant and Materials	Delivery notes, invoices, stock issue records, material usage records and actual paid invoices
Works subcontracted by the <i>Contractor</i>	Subcontract agreements, invoices, proof of payment, and relevant correspondence
Other Third-Party Costs	Third-party invoices, proof of payment
Accommodation	Invoices, proof of payment
Transport and Logistics	Vehicle logs, fuel records, transport invoices
Testing and Certification	Test certificates, inspection reports, laboratory results, calibration certificates
Insurance Costs (if reimbursable)	Insurance policy documents, premium invoices, proof of payment

2.14 Training workshops and technology transfer

- 1 No formal training workshops or structured technology-transfer programme are required under this contract.
- 2 Before Completion, the Contractor provides the Employer with the product-specific information necessary for the future inspection, maintenance and repair of the completed works, including, where applicable:
 - a. Manufacturer's inspection and maintenance recommendations;
 - b. recommended inspection intervals;
 - c. cleaning and maintenance requirements;
 - d. curing and return-to-service limitations;

- e. compatible repair and replacement materials;
 - f. precautions applicable to sealants, coatings and proprietary repair systems;
 - g. procedures for identifying deterioration or failure;
 - h. recommended methods for future local repairs; and
 - i. applicable warranties, guarantees, Technical Data Sheets and compliance certificates.
- 3 The Contractor explains the submitted information to the Employer's nominated operations, maintenance or engineering personnel as part of the handover of the Works.
- 4 The information required by this section forms part of the Completion documentation for the works.

3 Engineering and the *Contractor's* design

- 1 The works comprise remedial works to existing structures and infrastructure at Ankerlig Power Station.
- 2 The Employer provides the existing asset information and drawings identified in this Works Information and Section 7.
- 3 The Contractor designs only those parts of the works expressly identified in Section 3.2.
- 4 The Contractor's inspection, measurement, condition assessment, NDT, Defect Mapping, preparation of Method Statements and preparation of technical records do not, by themselves, constitute Contractor design.
- 5 Where this Works Information requires the Contractor to assess an existing condition and propose remedial measures, the Contractor is responsible for the engineering content of the proposed remedial measure to the extent stated in Section 3.2.
- 6 The Contractor notifies the Project Manager as soon as it becomes aware of:
- a. an ambiguity or inconsistency in the Employer's information, drawings, Site Information or this Works Information; or
 - b. a requirement which the Contractor considers to be illegal or impossible.
- 7 The Contractor does not alter an Employer-provided permanent requirement unless the Project Manager instructs a change to the Works Information.
- 8 Acceptance of Contractor design, proposed remedial measures, Method Statements or other technical submissions does not reduce the Contractor's responsibility for the design which it is required to provide.

3.1 *Employer's* design

- 1 The Employer's design comprises the existing permanent works and existing asset information identified in this Works Information and the drawings listed in Section 7.
- 2 The Employer's design information includes, as applicable:
- a. the existing Ankerlig 1 Dirty Water Dam;
 - b. the existing Ankerlig 2 Dirty Water Dam;
 - c. the existing associated concrete structures, joints, sumps and drainage infrastructure;
 - d. the existing fuel-containment structures associated with Gas 1 Tanks 1, 2 and 3;
 - e. the existing fuel-containment structures associated with OCGT Tanks A and B;
 - f. the existing tank foundations and tank-to-foundation interfaces; and

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- g. the existing clean and dirty underground stormwater drainage systems.
- 3 The Employer's existing drawings and information define the existing assets and interfaces against which the Contractor carries out the inspection and remedial works.
- 4 The Employer does not provide the final defect-specific permanent repair design for defects whose nature, extent or condition can only be determined after dewatering, cleaning, exposure, inspection or testing.
- 5 The Contractor verifies accessible dimensions, interfaces and existing conditions relevant to the work before commencing the affected activity.
- 6 Where the Contractor identifies that an actual Site condition differs materially from the Employer's information, it:
 - a. records the condition;
 - b. notifies the Project Manager; and
 - c. does not proceed with work which would conceal or prejudice assessment of the condition until the matter has been addressed.
- 7 Verification of dimensions, interfaces and existing conditions does not make the Contractor responsible for the adequacy of the existing Employer works.

3.2 Parts of the works which the Contractor is to design

- 1 The Contractor designs only the parts of the works identified in this section.
- 2 The Contractor designs the temporary works and temporary arrangements necessary to Provide the Works, including, as applicable:
 - a. temporary access and working arrangements;
 - b. temporary support and protection;
 - c. temporary pumping, storage, transfer and residual-water-control arrangements associated with dewatering; and
 - d. other temporary works necessary for the safe execution of the works.
- 3 Following dewatering, inspection and assessment of the Ankerlig 1 and Ankerlig 2 Dirty Water Dams, the Contractor prepares the condition assessment reports and proposed remedial measures required by this Works Information.
- 4 The proposed remedial measures include the engineering selection or detailing necessary to address the actual defects identified during the detailed condition assessment, including, where applicable:
 - a. repair of concrete deterioration, spalling and delamination;
 - b. treatment or replacement of affected reinforcement;
 - c. repair of cracks having regard to their classification as structural or non-structural and moving or non-moving;
 - d. repair of joints, joint sealants, waterstops, expansion boards and associated joint components;
 - e. repair of defects identified within associated concrete structures and the subsoil drainage sump; and
 - f. other remedial measures arising directly from findings recorded in the accepted condition assessment report.

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- 5 For joint and sealant repairs, the Contractor selects and proposes the joint sealant system to be used, subject to the requirements stated in this Works Information.
- 6 The proposed joint sealant system:
- accommodates the required joint movement;
 - is resistant to hydrocarbons, intermittent immersion and ultraviolet exposure;
 - includes the required backing material or bond-breaker arrangement;
 - includes primer where required by the Manufacturer; and
 - is compatible with the existing substrate and adjoining joint components.
- 7 For crack repairs, the Contractor assesses and classifies each crack before repair and selects the repair method appropriate to the crack classification and condition.
- 8 The crack-repair method is based on the requirements stated in this Works Information, including, where applicable:
- low-viscosity epoxy resin repair for appropriate non-moving cracks;
 - routed or formed joints and flexible sealant where required; and
 - injection repair using packers and manual or mechanical injection methods where applicable.
- 9 The Contractor designs or selects proprietary repair systems only to the extent necessary to satisfy the technical and performance requirements stated in this Works Information and the Manufacturer's specifications.
- 10 The following activities are not Contractor design merely because the Contractor prepares or performs them:
- visual inspection;
 - NDT;
 - Defect Mapping;
 - measurement and photography of defects;
 - preparation of Method Statements;
 - Quality Control Plans and Inspection and Test Plans; and
 - preparation of inspection and test records.
- 11 Where a document listed in paragraph 10 contains a design element falling within paragraphs 2 to 9, only that design element is treated as Contractor design.
- 12 The Contractor does not change an existing permanent requirement or the Employer's design intent unless the Project Manager instructs a change to the Works Information.

3.3 Procedure for submission and acceptance of Contractor's design

- 1 The Contractor submits the particulars of the Contractor's design identified in Section 3.2 to the Project Manager for acceptance in accordance with clause 21.2 of the conditions of contract.
- 2 The Contractor submits each design sufficiently early to allow for the period for reply stated in the Contract Data and any required resubmission before the relevant work is due to commence on the Accepted Programme.
- 3 Each Contractor design submission identifies the relevant asset or work area and includes, as applicable:

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- a. the purpose and extent of the design;
 - b. the relevant requirements of this Works Information and Employer drawings;
 - c. the existing conditions and design inputs relied upon;
 - d. assumptions used in developing the design;
 - e. drawings, sketches, details and dimensions necessary to define the design;
 - f. design calculations where required to demonstrate adequacy;
 - g. proposed Plant and Materials and applicable Technical Data Sheets;
 - h. performance characteristics and compatibility of the proposed system;
 - i. interfaces with the Employer's design, existing structures and other parts of the works;
 - j. installation, application or construction requirements necessary for the design to perform as intended; and
 - k. inspection, testing and acceptance criteria applicable to the completed design.
- 4 Contractor design submissions are prepared and checked by persons competent for the design being undertaken. Where applicable law requires professional registration for a particular design, the design is prepared or reviewed and signed by an appropriately registered person.
- 5 The Contractor clearly distinguishes between:
 - a. Contractor design submitted for acceptance;
 - b. Method Statements and construction procedures;
 - c. product or material submissions; and
 - d. inspection, testing and quality records.
- 6 A submission which contains both Contractor design and methodology clearly identifies the design component requiring acceptance under clause 21.2.
- 7 Contractor design may be submitted in parts in accordance with clause 21.3, provided each part contains sufficient information for that part of the design to be assessed.
- 8 Where the Project Manager does not accept a Contractor design, the Contractor revises and resubmits the design taking account of the reasons stated by the Project Manager.
- 9 A revised submission:
 - a. identifies the previous submission and revision;
 - b. identifies the changes made; and
 - c. responds to the reasons previously stated for non-acceptance.
- 10 The Contractor does not proceed with the relevant work until the Project Manager has accepted the applicable Contractor design.
- 11 A change proposed by the Contractor to an accepted Contractor design is submitted to the Project Manager for acceptance before the change is implemented.
- 12 A Contractor design submission which requires a change to the Employer's design or another requirement of the Works Information is clearly identified as such. The Contractor does not implement the proposed change unless the Project Manager instructs the change to the Works Information.
- 13 Technical review, comment or recommendation by the Employer's engineering personnel does not constitute acceptance of Contractor design unless acceptance is communicated by the Project Manager in accordance with the conditions of contract.

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- 14 The Supervisor is provided with the accepted Contractor design where it is relevant to inspection, testing, Hold Points, Witness Points or the identification of Defects.
- 15 The Contractor retains the accepted Contractor design and all subsequent accepted revisions as part of the final records for the works.
- 16 Acceptance of Contractor design by the Project Manager does not reduce the Contractor's responsibility for its design or its responsibility to Provide the Works in accordance with the contract.

3.4 Other requirements of the Contractor's design

- 1 The Contractor's design identified in Section 3.2:
- a. complies with applicable law, the requirements of this Works Information and the standards applicable to the relevant work;
 - b. is compatible with the existing concrete, reinforcement, waterstops, joint fillers, tank steel, sealants and other adjoining materials with which it interfaces;
 - c. is suitable for the applicable service exposure, including contaminated water, hydrocarbons, intermittent immersion, ultraviolet exposure, weathering and other environmental conditions at Ankerlig Power Station;
 - d. accommodates the assessed movement of cracks, joints and interfaces where movement is expected;
 - e. restores the required watertightness, durability and functional performance of the affected structure;
 - f. does not damage embedded waterstops, reinforcement, adjoining Plant and Materials or existing structures;
 - g. does not obstruct intended drainage paths or create water traps; and
 - h. addresses transitions and interfaces between existing and new materials and between different repair or sealing systems.
- 2 Where the Contractor selects a proprietary repair or sealant system, the components forming the system are chemically and physically compatible and are used within the limitations stated by the Manufacturer.
- 3 Where products or components from different Manufacturers are proposed as part of one system, the Contractor demonstrates their compatibility as part of the Contractor design submission.
- 4 Temporary works designed by the Contractor take account of the loads, Site conditions, existing structures, operational interfaces and construction sequence applicable to their use and are capable of being removed without damage to the permanent works.
- 5 The Contractor's design does not change a requirement of the Employer's design or this Works Information unless the Project Manager instructs the resulting change to the Works Information.

3.5 Use of Contractor's design

- 1 In addition to the rights stated in clause 22.1 of the conditions of contract and the intellectual-property provisions of the Contract Data, the Employer may use and copy the Contractor's design for the

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construction, Completion, operation, inspection, maintenance, repair, alteration, replacement and future modification of the affected assets.

- 2 The Contractor obtains from its designers, Subcontractors, Manufacturers and suppliers the rights necessary to permit the Employer to exercise the rights stated in this section.
- 3 The Contractor provides the final accepted Contractor design and all subsequent accepted revisions as part of the final records required for the works.

3.6 Design of Equipment

- 1 The Contractor remains responsible for the design, suitability, stability, safe use, operation and maintenance of its Contractor's Equipment and temporary arrangements used to Provide the Works.
- 2 This includes, as applicable:
 - a. scaffolding and working platforms;
 - b. temporary access systems;
 - c. pumps, hoses and temporary tanks used for dewatering and water transfer;
 - d. lifting and material-handling Equipment;
 - e. temporary containment arrangements;
 - f. inspection drones or camera systems;
 - g. high-pressure jetting Equipment;
 - h. vacuum-assisted flushing Equipment; and
 - i. other Contractor's Equipment required to Provide the Works.
- 3 Where instructed by the Project Manager in accordance with clause 23.1 of the conditions of contract, the Contractor submits particulars of the design of its Equipment.
- 4 The particulars include, as applicable:
 - a. drawings and relevant calculations;
 - b. safe working loads, capacities and operating limits;
 - c. certificates and statutory inspection records;
 - d. Manufacturer's information and operating requirements; and
 - e. inspection and maintenance requirements necessary for safe use.
- 5 The Contractor ensures that Contractor's Equipment requiring statutory inspection, testing, certification or authorisation is not used until the applicable requirements have been satisfied.
- 6 Review, inspection or acceptance of information relating to Contractor's Equipment does not reduce the Contractor's responsibility for its design, suitability, condition or safe use.

3.7 Equipment required to be included in the works

- 1 None.
- 2 Inspection, pumping, temporary water-storage, access, cleaning, drainage-inspection, high-pressure jetting, vacuum-flushing and other Equipment used by the Contractor to Provide the Works remains Contractor's Equipment and is not incorporated into the permanent works.

3.8 As-built drawings, operating manuals and maintenance schedules

- 1 The Contractor maintains the information necessary to prepare accurate as-built records as the works proceed.
- 2 Before Completion, the Contractor submits the final as-built and handover information applicable to the works in accordance with the document-format requirements stated in Section 2.2.
- 3 The final as-built information includes, as applicable:
 - a. final Defect Maps and repair-location schedules showing the location and type of completed repairs;
 - b. marked-up and final as-built drawings showing permanent changes made during the works;
 - c. joint, crack and repair schedules identifying the completed repair, installed material or system and relevant product or batch reference;
 - d. final drainage-route information showing inspected and cleaned sections, access points and identified residual defects or limitations; and
 - e. the final accepted Contractor design and revisions required under Section 3.
- 4 The Contractor submits the photographs, drainage-inspection videos, inspection reports, test records, material certificates, quality records, waste records, warranties and other Completion records required by this Works Information as part of the final records.
- 5 No separate operating manual is required for permanent mechanical or process Equipment under this contract.
- 6 For proprietary repair and sealant systems incorporated into the works, the Contractor provides the Employer with the applicable:
 - a. Manufacturer's Technical Data Sheets;
 - b. inspection and maintenance recommendations;
 - c. recommended inspection intervals;
 - d. cleaning requirements;
 - e. compatible materials for future maintenance or repair;
 - f. restrictions or precautions affecting future use or maintenance; and
 - g. warranties or guarantees.
- 7 The information required by paragraph 6 is coordinated with the handover and technology-transfer information required under Section 2.14.
- 8 As-built drawings identify the final installed or repaired condition and do not merely reproduce the Employer's original drawings where the actual works differ.
- 9 Completion is not achieved until the material as-built and handover information required by this Works Information has been submitted in a complete and usable form.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

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- 1 The Contractor provides people who are competent, suitably trained and experienced for the activities they perform.
- 2 People carrying out specialist activities, including:
 - a. condition assessment;
 - b. NDT;
 - c. concrete repair;
 - d. crack assessment and injection;
 - e. joint, waterstop and sealant repair and installation;
 - f. drainage inspection and flushing;
 - g. cleaning and degreasing; and
 - h. contaminated-water, sludge and waste handling,
 - i. have demonstrated competence appropriate to the activity.
- 3 Where a proprietary material or repair system requires installation by trained, approved or experienced applicators, the Contractor provides evidence of the applicable training, experience or Manufacturer authorisation before the relevant work commences.
- 4 Professional services and statutory functions are carried out by persons having the qualifications, professional registration or statutory competency required by applicable law or expressly required elsewhere in this Works Information.
- 5 Structural integrity reports and other professional engineering reports required by this Works Information are prepared and signed by a Professional Civil Engineer or Professional Civil Engineering Technologist, as applicable to the work being assessed.
- 6 The Contractor provides evidence of competency, qualifications, professional registration, Manufacturer authorisation or training when required by the Project Manager or Supervisor for work within that person's contractual function.
- 7 The requirements of this section apply equally to the Contractor's employees and the employees of its Subcontractors.

4.1.2 BBEE and preferencing scheme

- 1 The Contractor complies with the B-BBEE and preferential-procurement obligations, commitments and undertakings which form part of this contract.
- 2 The Contractor complies with the requirements concerning changes to its B-BBEE status stated in the Contract Data.

4.2 Subcontracting**4.2.1 Preferred subcontractors**

- 1 No preferred or nominated Subcontractors are identified by the Employer.
- 2 The Contractor selects its Subcontractors subject to clause 26 of the conditions of contract and the requirements of this Works Information.
- 3 Subcontracting does not reduce the Contractor's responsibility to Provide the Works in accordance with the contract.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

- 1 The Contractor submits the name of each proposed Subcontractor to the Project Manager for acceptance in accordance with clause 26.2.
- 2 The Contractor submits the proposed conditions of contract for each subcontract for acceptance where required by clause 26.3.
- 3 Where an NEC contract is proposed and the Project Manager instructs the Contractor to do so, the Contractor submits the proposed subcontract contract data for acceptance in accordance with clause 26.4.
- 4 The Contractor ensures that each subcontract contains requirements sufficient to enable the Contractor to comply with the obligations applicable to the subcontracted work, including, where relevant:
 - a. health and safety;
 - b. environmental management;
 - c. quality assurance, inspections and testing;
 - d. Contractor design;
 - e. confidentiality and intellectual property;
 - f. programme and coordination;
 - g. Site access and security;
 - h. records and Completion documentation; and
 - i. insurance and statutory requirements.
- 5 The Contractor does not include conditions in a subcontract which prevent or restrict compliance with this contract.
- 6 Where specialist competence, Manufacturer authorisation, professional registration or another qualification is required by this Works Information, the Contractor demonstrates that the proposed Subcontractor meets that requirement before the relevant work commences.

4.2.3 Limitations on subcontracting

- 1 No additional percentage or value limitation on subcontracting is imposed by this Works Information.
- 2 The Contractor remains responsible for ensuring that all subcontracted work is carried out by competent persons and organisations meeting the requirements of Section 4.1 and the applicable requirements of this Works Information.
- 3 The Contractor does not subcontract work to a person or organisation which does not possess the competency, statutory authorisation, professional registration or Manufacturer approval expressly required for that work.

4.2.4 Attendance on subcontractors

- 1 The Contractor provides the management, supervision, coordination, access arrangements, permits, temporary services, facilities, protection, setting out, quality control and records necessary for its Subcontractors to carry out their work.
- 2 The Contractor coordinates its Subcontractors with the Employer, Others and other Subcontractors so that subcontracted activities do not adversely affect safety, operations, quality or the Accepted Programme.

- 3 The Contractor remains the contractual point of responsibility for the performance and coordination of its Subcontractors

4.3 Plant and Materials

4.3.1 Quality

- 1 Plant and Materials incorporated into the works are new, undamaged, within their applicable shelf life and suitable for the intended use, substrate and service exposure.
- 2 Plant and Materials comply with the requirements of this Works Information, the accepted Contractor design where applicable, and the Manufacturer's requirements.
- 3 Repair materials and components forming part of a system are chemically and physically compatible.
- 4 Repair mortars are suitable for the existing concrete and provide the strength, durability and performance required by this Works Information.
- 5 Sealants, primers, backing materials, coatings and associated components are compatible with the substrate, adjoining materials and the environmental or chemical exposure applicable to the relevant structure.
- 6 Plant and Materials which are damaged, contaminated, incorrectly stored, expired or lacking required traceability are not incorporated into the works

4.3.2 Plant & Materials provided "free issue" by the Employer

- 1 The Employer provides no free-issue Plant or Materials under this Works Information.
- 2 The Contractor provides all Plant and Materials required to Provide the Works.
- 3 Any subsequent provision of Plant or Materials by the Employer is dealt with through the applicable instruction and contract procedures

4.3.3 Contractor's procurement of Plant and Materials

- 1 The Contractor procures, transports, handles, stores and protects Plant and Materials so that their quality and suitability are maintained until incorporation into the works.
- 2 Proprietary repair, sealant and coating products are stored, prepared, mixed, applied and cured in accordance with the Manufacturer's current written instructions and the accepted technical submission.
- 3 Materials are not used after expiry of their shelf life or usable pot life.
- 4 Plant and Materials requiring controlled storage are stored within the temperature, moisture, contamination-control and other conditions stated by the Manufacturer.
- 5 Materials are kept in identifiable containers or packaging with Manufacturer, product, batch and expiry information traceable to the quality records required under Section 2.6.
- 6 The Contractor submits the relevant Technical Data Sheets, Safety Data Sheets, certificates and Manufacturer information before the material is incorporated into the works where required by Section 2.6

4.3.4 Spares and consumables

- 1 No permanent spares are required unless expressly stated elsewhere in this Works Information.

- 2 The Contractor provides all consumables required to Provide the Works.
- 3 Unused Contractor consumables and surplus Plant and Materials are removed from the Site at Completion unless otherwise instructed by the Project Manager.

4.4 Tests and inspections before delivery

- 1 Before delivery to the Working Areas, the Contractor provides the certificates, batch records, test reports and other pre-delivery quality records required by this Works Information, the accepted Quality Control Plan or Inspection and Test Plan.
- 2 The records include, as applicable:
 - a. Manufacturer's certificates and compliance documentation;
 - b. batch and traceability records;
 - c. reinforcement certificates;
 - d. ready-mixed concrete or concrete constituent certificates;
 - e. sealant, primer, backing material, repair mortar, epoxy and other proprietary repair-system certificates; and
 - f. other pre-delivery test evidence required for the relevant Plant and Materials.
- 3 The Contractor gives the Supervisor reasonable notice of any pre-delivery test or inspection identified as a Witness Point or Hold Point in the accepted Quality Control Plan or Inspection and Test Plan.
- 4 The Supervisor may inspect Plant and Materials at the Manufacturer's premises, supplier's premises, storage facility or another Working Area before delivery or incorporation into the works.
- 5 Plant and Materials are not delivered for incorporation into the works where a required pre-delivery Hold Point has not been released.
- 6 Where this Works Information requires a particular Plant or Material to be tested or inspected before delivery, the Contractor does not bring that Plant or Material to the Working Areas until the Supervisor has notified the Contractor that it has passed the required test or inspection.
- 7 Inspection, witnessing or review by the Supervisor does not constitute acceptance of Plant and Materials which do not comply with the contract and does not reduce the Contractor's responsibility for their quality or suitability

4.5 Marking Plant and Materials outside the Working Areas

- 1 Plant and Materials intended for incorporation into the works and kept outside the Working Areas are identified sufficiently to maintain traceability to this contract.
- 2 Where applicable, the identification includes:
 - a. the contract number;
 - b. the relevant asset or work area;
 - c. the Manufacturer or supplier;
 - d. the product or material description;
 - e. batch, heat, lot or serial number; and
 - f. the relevant inspection, test or quality record reference.

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- 3 Identification is maintained until the Plant and Materials are delivered to the Working Areas and incorporated into the works.
- 4 Marking, tagging or other identification does not damage or impair the suitability of the Plant and Materials.
- 5 Where Manufacturer packaging already provides adequate traceability, additional physical marking of the Plant or Materials is not required

4.6 Contractor's Equipment (including temporary works).

- 1 The Contractor provides all Contractor's Equipment necessary to Provide the Works.
- 2 Contractor's Equipment is:
 - a. suitable for the activity for which it is used;
 - b. maintained in a safe and serviceable condition;
 - c. operated by competent persons;
 - d. inspected, tested and certified where required by applicable law, Manufacturer requirements or this Works Information; and
 - e. used in a manner which does not damage the existing works, Plant and Materials, structures or the environment.
- 3 Contractor's Equipment used for dewatering, water transfer, drainage inspection, flushing, high-pressure cleaning, concrete repair, lifting, access and temporary works is selected to suit the relevant Site conditions and operational constraints at Ankerlig Power Station.
- 4 Equipment used in or adjacent to contaminated water, sludge, hydrocarbons or other contaminated material is cleaned, maintained and managed so that contamination is not spread to unaffected areas.
- 5 The Contractor provides drip trays, spill-control measures and other containment measures appropriate to Contractor's Equipment where leakage of fuel, oil, hydraulic fluid or other substances could contaminate the Site.
- 6 Contractor's Equipment which is unsafe, defective, uncertified where certification is required, or unsuitable for the intended use is not used in Providing the Works.
- 7 The Contractor removes its Contractor's Equipment, temporary facilities and associated waste from the Site when no longer required and at Completion, unless otherwise instructed by the Project Manager.
- 8 The requirements of this section do not reduce the Contractor's responsibilities for the design of Contractor's Equipment and temporary works stated in Section 3.6

4.7 Cataloguing requirements by the Contractor

Not applicable.

5 Construction**5.1 Temporary works, Site services & construction constraints**

5.1.1 Employer's Site entry and security control, permits, and Site regulations

- 1 The Contractor complies with the access, induction, security, permit, isolation and Site-regulation requirements applicable at Ankerlig Power Station.
- 2 The Contractor obtains the applicable permit, authorisation or work-area release required before commencing the relevant activity.
- 3 Access to the Site or a work area does not constitute operational release of the affected:
 - a. Ankerlig 1 Dirty Water Dam;
 - b. Ankerlig 2 Dirty Water Dam;
 - c. fuel-containment area;
 - d. tank-to-foundation interface;
 - e. underground stormwater drainage system; or
 - f. other affected asset,for the Contractor to commence work.
- 4 The Contractor coordinates the required access, permits, isolations and operational releases sufficiently in advance to comply with the Accepted Programme.
- 5 The Contractor ensures that its employees and Subcontractors comply with the access, induction, security and permit requirements applicable to the area in which they work.
- 6 Contractor personnel and vehicles remain within the areas and routes made available by the Employer and comply with Site security instructions.
- 7 Plant, Materials, Contractor's Equipment and other items brought onto or removed from the Site are subject to the Employer's applicable security and access-control requirements.
- 8 Where an activity requires an isolation, permit-to-work, confined-space control, hot-work control or other Site-specific authorisation, the Contractor does not commence that activity until the required authorisation is in place.
- 9 Compliance with Site access, security, induction or permit requirements does not relieve the Contractor from complying with the health and safety, environmental, quality and other requirements of this Works Information.

5.1.2 Restrictions to access on Site, roads, walkways and barricades

- 1 The Contractor restricts its activities to the areas of the Site made available by the Employer for the works.
- 2 The Contractor uses only the access routes, roads, walkways, laydown areas and work areas authorised by the Employer.
- 3 The Contractor does not obstruct:
 - a. operational roads;
 - b. emergency access routes;
 - c. pedestrian walkways;
 - d. access to operating Plant;
 - e. firefighting equipment;
 - f. drainage routes; or
 - g. other areas required for Power Station operations,

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- 4 unless the obstruction has been agreed with the Employer and suitable temporary arrangements are in place.
- 5 The Contractor provides and maintains barricades, warning signs, temporary barriers and other controls appropriate to the hazards created by the works.
- 6 Open excavations, exposed edges, open chambers, drainage access points, dewatered structures and other hazardous areas are protected against unauthorised or accidental access.
- 7 Barricading and temporary access arrangements are maintained in a safe condition and are removed when no longer required.
- 8 Where the works affect an existing road, walkway or access route, the Contractor:
 - a. coordinates the restriction with the Employer before implementation;
 - b. provides safe alternative access where required; and
 - c. reinstates the affected area after completion of the work.
- 9 The Contractor prevents mud, debris, repair materials, contaminated material and waste generated by the works from obstructing or contaminating roads, walkways and drainage routes.
- 10 The Contractor does not store Plant, Materials, Contractor's Equipment or waste outside designated areas or in a manner which interferes with Power Station operations.
- 11 The Contractor complies with any additional temporary access restrictions or traffic-control requirements communicated by the Employer for operational or safety reasons

5.1.3 People restrictions on Site; hours of work, conduct and records

- 1 The Contractor complies with the working hours, access restrictions, conduct requirements and other personnel rules applicable at Ankerlig Power Station.
- 2 Work outside the normal working hours applicable at Ankerlig Power Station, including work on weekends, public holidays or during restricted operational periods, is subject to prior arrangement with the Employer and the applicable access, permit and operational requirements.
- 3 The Contractor allows for the applicable Site working-hour and access constraints in the Accepted Programme.
- 4 The Contractor makes attendance records available to the Project Manager or Supervisor on request.
- 5 The Contractor manages the access and conduct of its Subcontractors and ensures that they comply with the same Site restrictions and requirements applicable to the Contractor.
- 6 Contractor personnel comply with the Employer's Site rules relating to security, conduct, prohibited activities and use of Site facilities.

5.1.4 Health and safety facilities on Site

- 1 The Contractor provides and maintains the first-aid, emergency, welfare, washing, hygiene and decontamination facilities required for its activities, the number of people employed and the hazards identified in its risk assessments.
- 2 The Contractor provides the PPE and emergency Equipment required by applicable law, the Employer's Site requirements and Section 2.4.
- 3 Facilities made available by the Employer, if any, are identified in the Site Information or communicated through the applicable Site arrangements and do not reduce the Contractor's statutory or contractual health and safety responsibilities.

5.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest

- 1 Environmental controls and requirements relating to soil, water, vegetation, fauna, waste, pollution prevention and rehabilitation are stated in Section 2.5.
- 2 The Contractor confines disturbance to the areas required to Provide the Works and protects existing vegetation, drainage routes and adjoining environmental features from unnecessary disturbance.
- 3 The Contractor does not remove, damage or unnecessarily disturb vegetation or fauna outside the areas required for the works.
- 4 Where the Contractor discovers an object of value or historical interest within the Site, it notifies the Project Manager and deals with the object in accordance with clause 73.1 of the conditions of contract..

5.1.6 Title to materials from demolition and excavation

- 1 The Contractor obtains no title to materials arising from demolition, excavation, removal, cleaning or repair activities unless expressly stated otherwise in this Works Information or instructed by the Project Manager.
- 2 The Contractor does not reuse, remove for sale, sell or otherwise dispose of such materials for its own benefit.
- 3 Materials classified or managed as waste are handled, stored, transported and disposed of in accordance with Section 2.5 and applicable law.
- 4 Contaminated concrete, soil, sludge, joint materials, sealants, debris and other contaminated material arising from the works are treated as waste unless the Project Manager instructs otherwise.
- 5 Materials which the Employer identifies for retention or recovery are protected and handed over at the location instructed by the Project Manager

5.1.7 Cooperating with and obtaining acceptance of Others

- 1 The Contractor co-operates with the Employer and Others carrying out work in or adjacent to the Working Areas.
- 2 The Contractor coordinates its activities so that the works do not unnecessarily interfere with:
 - a. operation and maintenance activities at Ankerlig Power Station;
 - b. work being carried out by the Employer or Others;
 - c. access to operating Plant and infrastructure;
 - d. Site traffic and emergency access; and
 - e. environmental, safety and security controls.
- 3 The Contractor provides information reasonably required by the Employer or Others for coordination of interfaces with the works.
- 4 The Contractor obtains any statutory approval, permit, consent or acceptance required for work for which it is responsible.
- 5 Where Contractor design requires approval, consent or acceptance by a statutory authority or other person, the Contractor obtains that approval, consent or acceptance in accordance with clause 27.1 of the conditions of contract.
- 6 The Contractor allows for coordination with the Employer and Others in its programme where such coordination is necessary to Provide the Works.

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- 7 Cooperation with or review by Others does not reduce the Contractor's responsibility to Provide the Works in accordance with the contract.
- 8 Where an instruction or requirement from Others conflicts with the contract or may affect the Contractor's ability to Provide the Works, the Contractor notifies the Project Manager before implementing the affected requirement.

5.1.8 Publicity and progress photographs

- 1 The Contractor does not take photographs, video footage, drone imagery or other images of the works or Site without the prior written consent of the Project Manager in accordance with clause Z4.4 of the Contract Data.
- 2 Where photographs, videos or other images are required by this Works Information for condition assessment, Defect Mapping, inspection, quality control, testing or as-built records, the Contractor obtains the required written consent before commencing the applicable image-recording activities.
- 3 Images taken for contract purposes:
 - a. comply with the applicable Ankerlig Power Station security and access requirements;
 - b. are limited to what is reasonably required for the contractual record;
 - c. identify the relevant asset or work area, date and activity where practicable;
 - d. are indexed and retained as controlled contract records; and
 - e. are included in the applicable inspection, quality or Completion records.
- 4 The Contractor does not use images of the Site or works for publicity, advertising, social media, marketing, media communication or any external publication without the Employer's prior written consent.
- 5 Drone use is subject to the Project Manager's prior written consent and all applicable Site, security, safety and statutory requirements.

5.1.9 Contractor's Equipment

- 1 The Contractor positions, operates, stores and removes Contractor's Equipment so that it does not:
 - a. obstruct access to operating Plant, roads, walkways, emergency routes or drainage systems;
 - b. interfere with Ankerlig Power Station operations;
 - c. damage existing structures, services, surfacing or environmental controls; or
 - d. create an unacceptable safety, environmental or operational risk.
- 2 The Contractor uses only those areas made available by the Employer for the storage, parking or operation of Contractor's Equipment.
- 3 Contractor's Equipment is not left unattended in operational or restricted areas unless the applicable Site requirements permit this.
- 4 The Contractor coordinates the use of large, mobile or lifting Equipment with the Employer where its operation may affect access, security, operations or other work on Site.
- 5 Temporary hoses, cables, pumping lines and similar Equipment crossing roads or walkways are protected, routed or barricaded so that safe access is maintained.
- 6 The Contractor removes Contractor's Equipment from an affected work area when it is no longer required or when required to restore access or operational use.

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- 7 The requirements of this section are additional to the requirements of Section 4.6 Contractor's Equipment.

5.1.10 Equipment provided by the *Employer*

- 1 The Employer provides no Equipment for the Contractor's use in Providing the Works unless expressly stated elsewhere in this Works Information.
- 2 Where the Employer subsequently makes Equipment available for the Contractor's use, the conditions of use, responsibility, access, operation and return of that Equipment are agreed or instructed before use.
- 3 The Contractor does not assume the availability of Employer-owned lifting Equipment, vehicles, pumps, tools, access Equipment or other operational Equipment.
- 4 Any use of Employer-provided Equipment does not reduce the Contractor's responsibility to Provide the Works in accordance with the contract.

5.1.11 Site services and facilities

- 1 Except where expressly stated in this Works Information or the Site Information, the Employer does not provide Site services or temporary facilities for use by the Contractor.
- 2 The Contractor provides all temporary services, connections, distribution systems, storage, lighting and other facilities necessary to Provide the Works.
- 3 Where an Employer water-supply point is made available, the Contractor provides all hoses, tanks, pumps, fittings, temporary connections and distribution necessary from the identified supply point to its work area.
- 4 The Contractor does not connect to, alter or interfere with an Employer electrical, water, drainage, fire-protection, fuel, telecommunications or other service without the required Site authorisation and permits.
- 5 The Employer does not guarantee the continuity, pressure, flow rate or uninterrupted availability of any temporary service made available to the Contractor unless expressly stated otherwise in the Site Information.
- 6 The Contractor makes adequate contingency arrangements for interruption or temporary unavailability of any Employer service on which it elects to rely.
- 7 Waste collection, handling, temporary storage, transport and disposal are carried out in accordance with Section 2.5. The Contractor does not assume that an Employer waste-transfer or disposal facility is available unless the Site Information expressly identifies that facility and the applicable conditions of use.
- 8 Laydown, storage and Site-establishment areas are limited to areas made available by the Employer. The Contractor does not assume exclusive use of an area unless expressly stated.
- 9 The Contractor provides everything else necessary to Provide the Works.

5.1.12 Facilities provided by the *Contractor*

- 1 The Contractor provides, maintains and removes the temporary facilities necessary to Provide the Works, except for facilities expressly stated in this Works Information or the Site Information as being provided by the Employer.

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- 2 The Contractor provides, as applicable to the works:
 - a. Site offices and administration facilities;
 - b. storage areas and secure stores;
 - c. laydown and material-preparation areas;
 - d. welfare and hygiene facilities;
 - e. temporary lighting;
 - f. temporary water-storage and distribution facilities;
 - g. temporary power-generation or distribution facilities where required;
 - h. waste-storage and segregation areas;
 - i. spill-control and environmental-protection facilities;
 - j. temporary access and working platforms; and
 - k. other temporary facilities necessary for the safe and efficient execution of the works.
- 3 The location of temporary facilities is subject to the areas made available by the Employer and the applicable Site, safety, environmental and security requirements.
- 4 The Contractor does not erect, connect, alter or extend temporary facilities in a manner that interferes with existing Plant, services, roads, drainage, access routes or Power Station operations.
- 5 Temporary facilities are maintained in a clean, safe and serviceable condition for the period they are required.
- 6 The Contractor removes its temporary facilities and associated temporary services when no longer required and reinstates the affected areas before Completion.
- 7 Removal and reinstatement include, as applicable, removal of temporary foundations, connections, barriers, storage areas, waste and contamination arising from the Contractor's use of the area.

5.1.13 Existing premises, inspection of adjoining properties and checking work of Others

- 1 The Contractor does not assume that existing Employer offices, workshops, stores, welfare facilities, ablutions, parking areas or other premises are available for its use unless expressly made available by the Employer.
- 2 Where the Employer permits the Contractor to use an existing premise or facility, the Contractor:
 - a. uses it only for the purpose for which it is made available;
 - b. complies with the applicable Site, safety, environmental and security requirements;
 - c. keeps the premise or facility clean and in a serviceable condition;
 - d. does not alter or modify it without the Employer's prior authorisation; and
 - e. returns it in substantially the condition in which it was made available, fair wear and tear excepted.
- 3 Existing structures and infrastructure forming part of the works, including the Ankerlig 1 and Ankerlig 2 Dirty Water Dams, associated drainage infrastructure, fuel-containment areas and tank foundations, are not facilities provided for the Contractor's general use.
- 4 Damage caused by the Contractor to Employer premises, facilities or existing infrastructure is repaired by the Contractor.

5.1.14 Survey control and setting out of the works

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- 1 The Contractor is responsible for setting out the works from the dimensions, levels, locations and other information stated in this Works Information and the drawings listed in Section 7.
- 2 Before commencing the affected work, the Contractor verifies the accessible Site dimensions, levels and interfaces relevant to the setting out.
- 3 The Contractor verifies and records, as applicable:
 - a. existing Site levels;
 - b. drainage falls and interfaces;
 - c. locations and limits of identified repairs;
 - d. existing joints, cracks and other features forming the basis of remedial work;
 - e. tank-to-foundation interfaces; and
 - f. operational clearances and access constraints affecting construction.
- 4 Where repair locations, joint positions or defect extents can only be established after cleaning, dewatering or detailed inspection, the Contractor records and marks the affected locations before commencing the applicable repair.
- 5 The Contractor maintains sufficient setting-out and survey records to demonstrate the location and extent of the completed works.
- 6 Setting-out and survey records relevant to permanent repairs form part of the quality and as-built records required by this Works Information.
- 7 Where the Contractor identifies an inconsistency between the actual Site condition and the dimensions, levels or setting-out information contained in the Employer's information, it notifies the Project Manager before proceeding with the affected work.
- 8 Verification or setting out by the Contractor does not make the Contractor responsible for the adequacy of the Employer's design or for providing permanent-design dimensions, levels or geometry which are not stated in this Works Information.

5.1.15 Excavations and associated water control

- 1 The Employer coordinates the operational release of each pollution-control dam and identifies the applicable Ankerlig Power Station requirements governing the permitted transfer, treatment, storage or disposal route for water removed from the dam.
- 2 Following the required operational release, the Contractor carries out the bulk dewatering required to enable the detailed inspection, cleaning and remedial works stated in this Works Information.
- 3 The Contractor provides the pumps, hoses, temporary pipework, tanks, temporary containment and other Contractor's Equipment necessary for the dewatering operation.
- 4 The Contractor does not discharge, transfer or dispose of water from a pollution-control dam except through a route permitted by the applicable Ankerlig Power Station water-management arrangements, environmental authorisations and Section 2.5.
- 5 Following bulk dewatering, the Contractor controls residual water and water entering the released Working Area so that safe access, cleaning, inspection, preparation, repair, curing and testing can be carried out.

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- 6 The Contractor prevents water from entering prepared or curing repair areas and manages temporary pumping, hoses, tanks and containment so that contaminated water is not released to the environment or clean stormwater system.
- 7 Contaminated water, sludge, sediment, wash water and other material arising from dewatering or water-control activities are managed in accordance with Section 2.5.
- 8 Where excavation is required for the Ankerlig works, the Contractor protects the excavation against collapse, flooding, erosion and damage resulting from its activities and maintains it in a safe condition until backfilling or permanent construction is completed.
- 9 The Contractor controls water entering excavations or opened work areas so that the founding material, existing structure and prepared repair surfaces are not softened, eroded, contaminated or otherwise damaged.
- 10 Where unexpected groundwater, contaminated material, buried structures or another Site condition is encountered which may affect the works, the Contractor records the condition and notifies the Project Manager before proceeding with the affected work.

5.1.16 Underground services, other existing services, cable and pipe trenches and covers

- 1 The Contractor uses existing manholes and access chambers, where practicable, for the non-intrusive inspection of the underground stormwater drainage systems and verifies the relevant drainage route before flushing.
- 2 Before excavation, drilling or other intrusive work, the Contractor identifies and marks accessible underground and above-ground services within or adjacent to the affected work area using the available Site information, drawings, visible service features and suitable detection methods where required.
- 3 No excavation or intrusive work proceeds until the applicable service-clearance, permit and isolation requirements have been satisfied.
- 4 Existing pipes, cables, drainage systems, oil-water separators, manholes, sumps, ducts and other services remain operational unless the Project Manager instructs otherwise and the applicable Ankerlig Power Station requirements permit the interruption.
- 5 The Contractor does not disconnect, divert, relocate, alter or permanently cover an existing service unless the Project Manager instructs the change to the Works Information.
- 6 The Contractor protects existing services against damage arising from its excavation, construction, drainage-flushing, lifting, access and Contractor's Equipment activities.
- 7 Where work is carried out in close proximity to an existing service, the Contractor uses appropriate excavation and construction methods to prevent damage to the service and to maintain safe access to it.
- 8 Where an unidentified or incorrectly located service is encountered, the Contractor:
 - a. stops the affected work where continued work could damage the service or create a safety or operational risk;
 - b. protects the exposed service and work area;
 - c. records the condition and location; and
 - d. notifies the Project Manager before proceeding with the affected work

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- 9 Damage to an existing service caused during the Contractor's activities is immediately reported to the applicable Site representative and the Project Manager. The Contractor makes the area safe and carries out the required repair or reinstatement in accordance with the applicable Site requirements and the contract.
- 10 Any permanent alteration to an existing service forming part of the completed works is recorded in the applicable as-built documentation

5.1.17 Control of noise, dust, water and waste

- 1 The Contractor carries out the works so that noise, dust, water, waste and other emissions arising from its activities are controlled and do not cause unnecessary nuisance, pollution, contamination or interference with Ankerlig Power Station operations.
- 2 The Contractor complies with the environmental requirements stated in Section 2.5.
- 3 The Contractor controls dust generated by activities including:
 - a. concrete cutting, breaking, drilling and grinding;
 - b. removal of deteriorated concrete and joint materials;
 - c. surface preparation;
 - d. handling of dry repair materials; and
 - e. movement of vehicles or Contractor's Equipment over unsealed surfaces.
- 4 Dust-control measures do not result in contaminated runoff, damage to prepared surfaces or interference with the application of repair materials.
- 5 The Contractor manages water arising from:
 - a. dewatering;
 - b. cleaning and degreasing;
 - c. high-pressure cleaning or flushing;
 - d. drainage inspection and cleaning;
 - e. surface preparation; and
 - f. other construction activities,so that contaminated water is not discharged to the clean stormwater system, soil or environment.
- 6 Water, sludge, sediment, hydrocarbons, contaminated absorbent material, removed sealant, deteriorated concrete, packaging and other waste arising from the works are collected, segregated, temporarily stored, transported and disposed of in accordance with Section 2.5 and applicable law.
- 7 Waste is not buried, burned or disposed of on Site except through an authorised waste-management arrangement.
- 8 Waste storage areas and containers are suitable for the waste being stored and are managed to prevent leakage, windblown material, scavenging and contamination of surrounding areas.
- 9 Hazardous or contaminated waste is kept separate from general waste and is handled in accordance with the applicable classification, storage, transport and disposal requirements.
- 10 The Contractor retains the waste records, disposal certificates and other documentation required by Section 2.5 and includes them in the final records.

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- 11 The Contractor controls noise generated by its activities and complies with applicable Site requirements governing noisy work.
- 12 Where noisy work may interfere with Power Station operations, communication or other work in the area, the Contractor coordinates the activity with the Employer before commencing the affected work.
- 13 Work areas are kept reasonably clean and free of accumulated waste and debris throughout the execution of the works.
- 14 On completion of work in an area, the Contractor removes temporary materials, waste, debris and contamination arising from its activities and leaves the area in a clean and serviceable condition

5.1.18 Sequences of construction or installation

- 1 Except for the sequence constraints stated in this section, the Contractor determines the detailed sequence of its activities and shows it on the Accepted Programme.
- 2 For pollution-control dam remedial works, the Contractor does not commence permanent repairs until:
 - a. the applicable access, permits and operational release have been obtained;
 - b. the dam has been dewatered sufficiently to permit the required inspection;
 - c. cleaning and degreasing required for inspection have been completed;
 - d. the required condition assessment, NDT and Defect Mapping have been completed;
 - e. the condition-assessment report and proposed remedial measures have been submitted and accepted as required by this Works Information; and
 - f. the applicable quality submissions and Hold Points have been established.
- 3 Following acceptance of the proposed remedial measures, the Contractor sequences the repairs so that preparation, installation, curing, inspection and testing are completed without contamination, damage or premature exposure of the repair system.
- 4 Underground drainage inspection and flushing is sequenced so that
 - a. the initial condition is recorded before flushing;
 - b. flushing is carried out only after the applicable discharge and water-management arrangements are in place; and
 - c. the relevant drainage section is re-inspected after flushing.
- 5 Fuel-containment and tank-to-foundation interface repairs are sequenced so that:
 - a. the applicable work area is operationally released;
 - b. existing Plant and adjoining surfaces are protected;
 - c. defective joint or sealant materials are removed and the exposed condition is inspected;
 - d. the applicable repair or sealant system has been accepted where acceptance is required;
 - e. the substrate is prepared and applicable Hold Points are released;
 - f. the repair or sealant system is installed in accordance with the accepted submission and Manufacturer's requirements;
 - g. the required curing period is completed before the repaired area is exposed to service conditions; and
 - h. the completed repair is inspected, recorded and reinstated before handover.

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- 6 Where concrete, crack, joint, waterstop or reinforcement repairs are carried out, the Contractor sequences the work so that:
- the defect is exposed and assessed before repair;
 - the repair extent is established before permanent repair materials are placed;
 - preparation and cleaning are completed before application of repair materials;
 - the applicable inspection or Hold Point is completed before the repair is concealed;
 - curing and protection requirements are maintained; and
 - the completed repair is inspected and recorded.
- 7 The Contractor does not alter a sequence which is necessary for safety, operational control, environmental protection, quality or technical performance without first coordinating the proposed change with the Project Manager and reflecting it in the Accepted Programme where required.

5.1.19 Giving notice of work to be covered up

- 1 The Contractor gives the Supervisor notice before covering, enclosing, backfilling, sealing, coating or otherwise making work inaccessible for inspection.
- 2 Unless another period is stated in the accepted Quality Control Plan or Inspection and Test Plan, the Contractor gives the Supervisor at least five (5) Working Days' notice before the relevant work is covered or becomes inaccessible.
- 3 The notice identifies:
- the relevant asset or work area;
 - the work to be inspected;
 - the applicable drawing, repair detail, QCP or ITP reference;
 - the proposed date and time of covering or concealment; and
 - the relevant Hold Point or Witness Point, where applicable.
- 4 The Contractor does not proceed beyond a Hold Point until the required inspection or test has been completed and the Supervisor has confirmed release of the Hold Point
- 5 The requirement applies, as applicable, to:
- prepared concrete repair surfaces before placement of repair material;
 - exposed reinforcement before repair concrete or mortar is placed;
 - prepared cracks before injection, sealing or filling;
 - prepared joints before installation of backing material, primer or sealant;
 - waterstops, joint components and expansion materials before they become concealed;
 - tank-to-foundation interface preparation before installation of the sealant system;
 - underground or concealed drainage repairs before closure or reinstatement; and
 - other work identified in the accepted QCP or ITP.
- 6 Where work is covered or made inaccessible without the required notice or release, the Contractor exposes or opens the work if instructed by the Supervisor and makes good the affected area after inspection.
- 7 Inspection or release of work before it is covered does not reduce the Contractor's responsibility to Provide the Works in accordance with the contract

5.1.20 Hook ups to existing works

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- 1 No permanent mechanical, electrical, control or process hook-ups to existing Power Station systems are required unless expressly stated in this Works Information or an Employer drawing.
- 2 The Contractor does not connect to, disconnect, alter, isolate or interfere with an existing Power Station service or system without the applicable Site authorisation, permit and operational release.
- 3 Temporary connections required for water, power, drainage, pumping, waste transfer or other construction purposes are coordinated with the Employer and comply with Sections 5.1.11 and 5.1.16.
- 4 Before making a connection to an existing system, the Contractor verifies the accessible interface and confirms that the proposed connection will not adversely affect the existing system or Power Station operations.
- 5 The Contractor protects existing services and systems during temporary connection and use and removes temporary connections when no longer required.
- 6 Following removal of a temporary connection, the Contractor reinstates the affected existing system or interface to a safe and serviceable condition.
- 7 Any permanent connection or alteration not already required by the Works Information is carried out only following an instruction by the Project Manager

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

- 1 On or before the Completion Date, the Contractor has done everything required to Provide the Works, except for work which this Works Information expressly states may be done after Completion.
- 2 Before Completion, the Contractor has:
 - a. completed all physical works required by this Works Information;
 - b. completed the required dewatering, cleaning, degreasing, inspections, condition assessments, NDT and Defect Mapping;
 - c. completed the accepted remedial repairs to the Ankerlig 1 and Ankerlig 2 Dirty Water Dams;
 - d. completed the required repairs to concrete, reinforcement, cracks, joints, waterstops, expansion-joint components and sealant systems;
 - e. completed the required repairs and resealing of the fuel-containment areas and tank-to-foundation interfaces;
 - f. completed the required inspection, flushing, cleaning and post-inspection of the underground clean and dirty stormwater drainage systems;
 - g. completed all required testing, inspections, Hold Points and Witness Points;
 - h. corrected Defects which would prevent the Employer from using the works for their intended purpose;
 - i. completed all required reinstatement and environmental close-out;
 - j. removed temporary works, waste, surplus Plant and Materials and Contractor's Equipment which are not required for correction of Defects;
 - k. left the Working Areas clean, safe and ready for return to service; and
 - l. completed the handover requirements stated in this Works Information

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- 3 Before Completion, the Contractor has submitted the final records required by this Works Information, including, as applicable:
 - a. accepted professional and structural integrity reports;
 - b. final condition-assessment reports;
 - c. Defect Maps and repair-location schedules;
 - d. drainage inspection videos and reports
 - e. inspection and test records;
 - f. material and product certificates;
 - g. calibration records;
 - h. non-conformance and corrective-action close-out records;
 - i. waste classification, transport and disposal records;
 - j. warranties and guarantees;
 - k. Manufacturer's Technical Data Sheets and maintenance recommendations;
 - l. final accepted Contractor design and revisions;
 - m. as-built drawings and records required under Section 3.8; and
 - n. the completed quality data books or packs required under Section 2.6.
- 4 Final records required for Completion are submitted in a complete, indexed and usable form.
- 5 No item of work is identified in this Works Information as being permitted to remain outstanding after Completion.
- 6 The Project Manager certifies Completion when the Contractor has done all the work which the Works Information states is to be done by the Completion Date and has corrected notified Defects which would have prevented the Employer from using the works and Others from doing their work.

5.2.2 Use of the works before Completion has been certified

- 1 The Employer may use or return to operational service a completed or substantially completed part of the works before Completion of the whole of the works where operational requirements require this.
- 2 Such use may include, as applicable:
 - a. return to service of an Ankerlig 1 or Ankerlig 2 Dirty Water Dam;
 - b. return to service of a fuel-containment area;
 - c. return to service of a repaired tank-to-foundation interface; or
 - d. use of an inspected, flushed or repaired drainage section.
- 3 Before the Employer uses or returns an affected part of the works to service, the Contractor completes the inspections, testing, curing and other technical requirements necessary for that part to be safely and properly used.
- 4 The Contractor provides the records reasonably required to confirm that the affected part is ready for operational use.
- 5 Use of a part of the works by the Employer before Completion of the whole of the works does not, by itself:
 - a. constitute Completion of the whole of the works;
 - b. constitute acceptance of Defects or non-compliant work;
 - c. relieve the Contractor from correcting Defects; or

- d. reduce the Contractor's obligations under the contract.
- 6 Where early operational use affects the Contractor's remaining activities, access, sequence or programme, the Contractor and Project Manager deal with the effect in accordance with the conditions of contract

5.2.3 Materials facilities and samples for tests and inspections

- 1 The Contractor provides all labour, materials, samples, safe access, lighting, measuring Equipment, calibrated instruments, temporary facilities and other resources necessary to carry out the tests and inspections required by this Works Information and the accepted Quality Control Plan or Inspection and Test Plan.
- 2 The Contractor provides, as applicable:
 - a. concrete cube specimens and the arrangements necessary for testing them;
 - b. test samples and representative material samples;
 - c. access, platforms and lighting required for inspection;
 - d. temporary filling, pumping, hoses, tanks and other water-handling arrangements where required for testing or inspection; and
 - e. records and certificates necessary to demonstrate the results of the test or inspection.
- 3 Where an Employer water-supply point is made available in accordance with Section 5.1.11, the Contractor may use that supply subject to the applicable Site arrangements. Availability of an Employer water-supply point is not guaranteed and does not reduce the Contractor's responsibility to provide sufficient water required for its tests and inspections.
- 4 The Contractor provides all hoses, temporary storage, pumping and transfer arrangements necessary for water used in its tests and inspections.
- 5 Following completion of a test or inspection involving water, the Contractor removes, transfers or disposes of the water through a route permitted by the applicable Ankerlig Power Station and environmental requirements. Water is not discharged to the environment or clean stormwater system without the applicable authorisation.
- 6 The Contractor gives the Supervisor the notice required by Section 2.6 and Section 5.1.19 before each planned test or inspection.
- 7 Where a test or inspection identifies a Defect, the Contractor corrects the Defect and repeats the affected test or inspection in accordance with clause 40.4 of the conditions of contract.
- 8 The Contractor submits the results and supporting records for each required test and inspection as part of the quality and Completion records for the works.
- 9 Unless expressly stated otherwise in this Works Information, the Employer does not provide materials, samples, testing Equipment or temporary testing facilities for the Contractor's tests and inspections.

5.2.4 Commissioning

- 1 No separate mechanical, electrical, control or process commissioning is required under this contract unless expressly stated elsewhere in this Works Information.
- 2 Before an affected part of the works is returned to operational service, the Contractor completes the inspections, tests, curing periods and quality records applicable to that work.
- 3 The Contractor demonstrates, where applicable, that:

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- a. repaired concrete surfaces and structural repairs have been completed and inspected;
 - b. crack, joint, waterstop and sealant repairs have been completed in accordance with the accepted repair method and Manufacturer's requirements;
 - c. tank-to-foundation interface repairs are complete and ready for service;
 - d. fuel-containment repairs are complete and free from visible defects;
 - e. underground stormwater drainage sections have been inspected, flushed or cleaned and re-inspected as required; and
 - f. temporary works, temporary connections, pumping arrangements and construction controls which are no longer required have been removed.
- 4 Where a Manufacturer specifies a minimum curing, waiting or protection period before a repaired area may be exposed to water, hydrocarbons, traffic, loading or other service conditions, the Contractor completes that period before the affected work is returned to service.
- 5 The Contractor provides the Supervisor and Project Manager with the applicable inspection, test and quality records required to demonstrate that the affected work is ready for use.
- 6 Return of an asset or part of the works to operational service does not constitute Completion of the whole of the works unless the requirements for Completion have also been satisfied.
- 7 Where a test or inspection required before return to service identifies a Defect, the Contractor corrects the Defect and repeats the affected test or inspection before the work is returned to service.

5.2.5 Start-up procedures required to put the works into operation

- 1 No separate start-up procedure is required for mechanical, electrical, control or process Plant under this contract unless expressly stated elsewhere in this Works Information.
- 2 Before an affected asset or work area is returned to operation, the Contractor:
- a. confirms that the applicable repairs are complete;
 - b. completes the required curing and protection periods;
 - c. completes the required inspections and tests;
 - d. corrects Defects which would prevent the affected asset from being safely returned to service;
 - e. removes temporary works, tools, debris and Contractor's Equipment which are no longer required;
 - f. reinstates access, drainage paths, barriers and other affected interfaces; and
 - g. provides the applicable quality, inspection and test records required by this Works Information.
- 3 Return to service of an Ankerlig 1 or Ankerlig 2 Dirty Water Dam is coordinated with the Employer after completion of the applicable dam repairs and required inspections.
- 4 Return to service of a fuel-containment area or tank-to-foundation interface is coordinated with the Employer after the applicable sealant or repair system has achieved the Manufacturer-required cure and service-readiness condition.
- 5 Return to service of an underground stormwater drainage section takes place after the required inspection, flushing or cleaning and post-inspection have been completed.
- 6 The Contractor does not independently fill, place into service, operate or otherwise return an Employer asset to operational use without the applicable operational release or instruction from the Employer.

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- 7 The Contractor notifies the Project Manager of any outstanding condition which may affect safe or reliable return to service.
- 8 Return of an affected asset to operational use before Completion of the whole of the works is dealt with in accordance with Section 5.2.2.

5.2.6 Take over procedures

- 1 Take over of the works is carried out in accordance with clause 35 of the conditions of contract and the Contract Data.
- 2 Before the anticipated take over of the works, the Contractor participates with the Employer in a joint handover inspection.
- 3 The handover inspection confirms, as applicable:
 - a. the status of the completed works;
 - b. notified Defects and any remaining minor items which do not prevent Completion;
 - c. that temporary works and Contractor's Equipment not required after take over have been removed;
 - d. that the Working Areas have been cleaned and reinstated;
 - e. that applicable safety, environmental and work-area permits or temporary controls have been closed out or transferred as required;
 - f. that the Completion and handover records required by Sections 5.2.1 and 3.8 have been submitted; and
 - g. that the affected assets and work areas are suitable for return to the Employer.
- 4 The joint handover inspection does not replace or alter the requirements for Completion stated in Section 5.2.1.
- 5 The Employer is not required to take over the works before the Completion Date where this is stated in the Contract Data.
- 6 Where the Employer has used or taken over a part of the works before Completion of the whole of the works, the applicable provisions of clause 35 and Section 5.2.2 apply.
- 7 The Project Manager certifies the date upon which the Employer takes over the works, or a part of the works, and its extent in accordance with clause 35.3.
- 8 Take over does not relieve the Contractor of its obligations concerning Defects, warranties, guarantees or other obligations which continue after take over.

5.2.7 Access given by the Employer for correction of Defects

- 1 Where access to or use of a part of the works which the Employer has taken over is required for correction of a Defect, the Project Manager arranges the necessary access and use in accordance with clause 43.4 of the conditions of contract.
- 2 Access for Defect correction remains subject to the security, induction, permit, isolation, environmental and operational requirements applicable at Ankerlig Power Station.
- 3 The Contractor advises the Project Manager and Supervisor of the access, work area, isolation and operational requirements necessary to correct the Defect and coordinates the proposed correction with them.

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- 4 For a Defect creating an immediate safety, environmental pollution or containment risk, the Contractor participates in urgent coordination with the Employer so that the affected area can be made safe and the Defect corrected within the applicable defect correction period.
- 5 The Contractor:
 - a. protects Power Station operations and adjacent assets while correcting the Defect;
 - b. maintains the required health, safety and environmental controls;
 - c. removes temporary arrangements and waste arising from the correction;
 - d. reinstates any area disturbed by the correction; and
 - e. provides the inspection, test and revised as-built or quality records applicable to the corrected work.
- 6 Correction of a Defect after take over does not constitute new or additional work where the correction is required under the Contractor's obligations under the contract.

5.2.8 Performance tests after Completion

- 1 No performance tests are required after Completion unless expressly stated elsewhere in this Works Information.
- 2 All inspections, tests and verification required to demonstrate compliance with the Works Information are completed before Completion, except where the conditions of contract expressly permit otherwise.
- 3 Where a Defect is corrected after Completion and the corrected work requires testing or inspection to demonstrate compliance, the Contractor carries out the applicable test or inspection as part of the Defect correction.
- 4 Any such test or inspection after Completion does not constitute a separate performance-testing regime and does not alter the Contractor's obligations concerning Defects.

5.2.9 Training and technology transfer

- 1 No separate formal operator-training programme is required under this contract.
- 2 The Contractor completes the product-specific handover, explanation and technology-transfer requirements stated in Section 2.14 before Completion.
- 3 Any Manufacturer-required demonstration or explanation associated with the inspection, maintenance or future repair of a proprietary repair or sealant system is included in the handover required by Section 2.14 and does not constitute a separate training programme.

5.2.10 Operational maintenance after Completion

- 1 The Contractor is not required to provide routine operational maintenance of the works after Completion unless expressly stated elsewhere in this Works Information.
- 2 After Completion, the Contractor remains responsible for:
 - a. correction of Defects in accordance with the conditions of contract;
 - b. obligations arising from applicable warranties and guarantees; and
 - c. providing any outstanding clarification reasonably required in relation to Manufacturer maintenance recommendations already submitted under Section 3.8.

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- 3 Routine inspection, operation and maintenance of the repaired dams, fuel-containment areas, tank-to-foundation interfaces and drainage systems after Completion are the Employer's responsibility unless otherwise instructed through the contract.
- 4 Nothing in this section reduces the Contractor's obligations during the Defects period.

6 Plant and Materials standards and workmanship

6.1 Investigation, survey and Site clearance

- 1 The Contractor carries out the investigations, surveys, Site verification and Site-clearance activities required by this Works Information before commencing the affected permanent work.
- 2 Before commencing an inspection, assessment or remedial activity, the Contractor reviews the available:
 - a. Employer drawings;
 - b. as-built information;
 - c. Site Information;
 - d. previous inspection information made available by the Employer; and
 - e. other information relevant to the affected asset or work area.
- 3 The Contractor verifies accessible dimensions, levels, interfaces and existing conditions relevant to the work. The requirements for existing-condition records, survey control, setting out and existing services are additionally stated in Sections 5.1.13, 5.1.14 and 5.1.16.
- 4 Following dewatering and operational release, the Contractor carries out a detailed condition assessment of:
 - a. the Ankerlig 1 Dirty Water Dam; and
 - b. the Ankerlig 2 Dirty Water Dam.
- 5 The detailed condition assessment includes, as applicable:
 - a. visual inspection of accessible concrete surfaces, floors, walls, joints, sumps and associated structures;
 - b. measurement and recording of defects;
 - c. photographs and Defect Mapping;
 - d. identification of cracking, spalling, delamination, exposed reinforcement and other concrete deterioration;
 - e. inspection of joints, joint sealants, waterstops, expansion boards and associated joint components;
 - f. hammer tapping or other suitable sounding methods to identify delaminated concrete; and
 - g. Schmidt hammer testing where required for assessment of concrete condition.
- 6 The Contractor records the location, extent, nature and severity of identified defects sufficiently to permit classification, preparation of proposed remedial measures, measurement and subsequent verification of the completed repairs.
- 7 The Contractor submits a condition-assessment report for each Dirty Water Dam. The report includes:
 - a. the inspection methodology used;

- b. the areas inspected;
 - c. Defect Maps;
 - d. photographs;
 - e. NDT results;
 - f. identified defects and their classification;
 - g. measured quantities; and
 - h. proposed remedial measures.
- 8 Permanent remedial work to a Dirty Water Dam does not commence until the applicable condition-assessment report and proposed remedial measures have been submitted and accepted in accordance with this Works Information.
- 9 Before flushing and cleaning the underground clean and dirty stormwater drainage systems, the Contractor carries out the required pre-cleaning non-intrusive inspection and records the existing condition of the relevant drainage routes.
- 10 The Contractor uses existing manholes and access chambers where practicable and records:
- a. the drainage route inspected;
 - b. blockages and restrictions;
 - c. sediment, sludge or debris accumulation;
 - d. visible structural defects; and
 - e. photographic and video evidence.
- 11 Following drainage flushing and cleaning, the Contractor carries out the required post-cleaning inspection to confirm the condition of the cleaned drainage sections and the effectiveness of the cleaning.
- 12 Before commencing work on a fuel-containment area or tank-to-foundation interface, the Contractor verifies the accessible existing conditions and dimensions relevant to the proposed repair.
- 13 Site clearance is limited to the extent necessary to Provide the Works.
- 14 The Contractor protects existing structures, services, drainage infrastructure, vegetation and adjoining work which is not required to be removed or disturbed.
- 15 Where an investigation, survey or Site-clearance activity identifies a material discrepancy between the actual Site condition and the Employer's design information, the Contractor records the condition and notifies the Project Manager before proceeding with the affected work.
- 16 Investigation, measurement or verification by the Contractor does not transfer responsibility for the Employer's design to the Contractor

6.2 Building works

- 1 No separate building works are required under this contract.
- 2 Where minor making-good or reinstatement of an existing building element becomes necessary solely as a consequence of the Contractor's activities, the Contractor reinstates the affected element to a condition not worse than its condition before the work commenced.
- 3 Such reinstatement does not constitute a separate building-work scope and does not relieve the Contractor from complying with the applicable requirements of this Works Information.

6.3 Civil engineering and structural works

6.3.1 General

- 1 Civil engineering and structural works are carried out in accordance with this Works Information, the drawings listed in Section 7, accepted Contractor design where applicable, the quality requirements in Section 2.6 and the applicable standards stated in Section 6.6.
- 2 Permanent remedial work to a pollution-control dam commences only after the applicable condition assessment has been completed and the proposed remedial measures have been accepted as required by this Works Information.
- 3 Existing structures, Plant, services and adjoining areas are protected against damage.
- 4 New and repair materials are compatible with the existing substrate and intended service exposure.
- 5 The civil and structural works include, as applicable:
 - a. remedial works to the Ankerlig 1 and Ankerlig 2 Dirty Water Dams;
 - b. concrete, reinforcement and crack repairs;
 - c. joint, waterstop and sealant repairs;
 - d. fuel-containment repairs;
 - e. tank-to-foundation interface sealing; and
 - f. underground stormwater drainage inspection and cleaning.

6.3.2 Joint, waterstop and sealant repairs to Dirty Water Dams

- 1 The Contractor removes defective existing sealant and backing material from affected joints.
- 2 Existing joint faces are prepared by removing:
 - g. loose or unsound material;
 - h. existing sealant residue;
 - i. oil and grease;
 - j. algae and biofilm;
 - k. dust; and
 - l. other contaminants which may affect adhesion.
- 3 Joint preparation does not unnecessarily damage:
 - a. sound concrete arrises;
 - b. reinforcement;
 - c. embedded waterstops; or
 - d. other sound joint components.
- 4 The Contractor inspects the exposed:
 - a. waterstop;
 - b. expansion board or compressible joint filler;
 - c. backing material; and
 - d. adjoining concrete.
- 5 Before installation of the replacement joint system, the Contractor verifies the joint geometry, including width and depth, the condition of the exposed joint components, the applicable joint movement and the moisture condition required by the proposed sealant Manufacturer

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- 6 Defective or displaced expansion boards, joint fillers, waterstops or joint tapes are repaired or replaced where required by the accepted remedial measure.
- 7 Closed-cell backing rod or bond-breaker tape is installed where required.
- 8 Primer is applied where required by the Manufacturer.
- 9 The replacement sealant:
 - a. is elastomeric;
 - b. accommodates the assessed joint movement;
 - c. is suitable for intermittent immersion where applicable;
 - d. is resistant to hydrocarbons where applicable;
 - e. is resistant to ultraviolet exposure where exposed; and
 - f. is compatible with the existing concrete and adjoining joint components.
 - g. is installed in accordance with the Manufacturer's current written requirements
- 10 The completed joint provides a continuous, durable and watertight seal.

6.3.3 Crack repairs

- 1 Cracks are assessed and classified before repair.
- 2 The assessment determines, as applicable:
 - a. whether the crack is structural or non-structural;
 - b. whether the crack is moving or non-moving;
 - c. crack width, depth and extent;
 - d. whether water, vegetation or contamination is present; and
 - e. the repair method appropriate to the condition.
- 3 Cracks wider than 0.2 mm are repaired unless otherwise determined in the accepted remedial assessment.
- 4 Cracks which run along existing joints are cut and prepared to form a joint with a minimum width of 10 mm and are repaired using the applicable accepted joint-sealant system.
- 5 Where it has been determined that there is no movement along a dry crack, the crack is opened by cutting a slot approximately 20–30 mm wide and up to 50 mm deep along the crack and is thereafter repaired in accordance with Section 6.3.4.
- 6 For dry cracks on horizontal surfaces where gravity-fed resin repair is appropriate:
 - a. the crack is widened using a diamond blade to form a V-shaped reservoir approximately 10 mm deep;
 - b. loose material and dust are removed;
 - c. an accepted low-viscosity crack-injection resin is placed in the reservoir and allowed to penetrate the crack by capillary action; and
 - d. after the resin has set, excess material is removed and the repair is finished smooth and uniform.
- 7 Where injection repair is used:
 - a. the entire crack surface is wire-brushed to remove laitance and loose material;
 - b. 10 mm diameter holes are drilled approximately 70–100 mm deep at 300 mm centres on either side of the crack in a staggered arrangement;

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- c. the holes are drilled at an angle of approximately 30°–45° to intercept the crack;
 - d. drilling depth is adjusted to suit the actual crack condition and accepted remedial measure;
 - e. the crack surface and drilled holes are cleaned using compressed air;
 - f. packers are secured in the drilled holes;
 - g. the crack surface is sealed using a quick-setting mortar or epoxy bedding compound and allowed to cure in accordance with the Manufacturer's requirements; and
 - h. injection is performed using a manual or mechanical injection pump appropriate to the accepted repair method.
- 8 Manual injection pumps may be used for wider cracks where the anticipated injection pressure is less than 2 MPa, subject to the accepted remedial measure.
- 9 Where movement is expected, the crack is routed or otherwise prepared and repaired using a flexible sealant system suitable for the assessed movement and exposure.
- 10 Repair resins, mortars and sealants are used in accordance with the Manufacturer's current written requirements and the accepted remedial measure.
- 11 Completed crack repairs restore, as applicable, the required watertightness, durability and structural integrity of the affected structure.

6.3.4 Concrete and reinforcement repairs

- 1 Spalled, delaminated or otherwise defective concrete is removed to sound concrete.
- 2 Before removal, the perimeter of the affected repair area is saw-cut to a depth of approximately 10 mm, generally in a rectangular shape.
- 3 Concrete within the saw-cut area is removed to sound material using light-weight pneumatic Equipment or another suitable method which does not unnecessarily damage sound surrounding concrete, reinforcement, joints, waterstops or embedded items.
- 4 Repair edges are prepared to provide adequate anchorage, including dovetailing where required, and no feather edges are left.
- 5 Reinforcement exposed during removal is sufficiently uncovered to permit inspection, cleaning and treatment.
- 6 Exposed reinforcement is:
- a. wire-brushed or mechanically cleaned to remove corrosion products, loose scale and contaminants; and
 - b. treated using the applicable accepted reinforcement-protection system where required.
- 7 Where reinforcement has significant section loss or another material defect, the Contractor records the condition, notifies the Project Manager and implements the accepted remedial measure before the repair is closed.
- 8 Replacement or supplementary reinforcement is fixed where required by the accepted remedial measure.
- 9 The prepared concrete substrate is cleaned so that dust, laitance, loose material and other contaminants are removed.
- 10 Where required by the Manufacturer of the proposed repair material, the repair area is saturated or pre-wetted with clean water and excess water is removed before application.

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- 11 Structural repair mortar is:
 - a. non-shrink;
 - b. suitable for structural concrete repair;
 - c. compatible with the existing concrete;
 - d. of strength not less than that required by the applicable repair detail or accepted remedial measure; and
 - e. mixed, placed, compacted, finished and cured in accordance with the Manufacturer's current written requirements.
- 12 Water is not added after the permitted mixing period or during the usable pot life in order to restore workability.
- 13 Where the repair depth exceeds approximately 100 mm, or where repair mortar is otherwise unsuitable, suitable micro-concrete or replacement concrete is used in accordance with the accepted remedial measure.
- 14 Replacement concrete is 30 MPa where required by the applicable repair detail or accepted remedial measure.
- 15 Where the Manufacturer specifies a seven-day curing period for the accepted repair system, the Contractor cures the repair for seven (7) days, or for another period where expressly required by that Manufacturer.
- 16 Completed repairs are protected against premature drying, contamination, loading, vibration and immersion during the applicable curing period.
- 17 Completed repairs restore the required structural integrity, durability and containment performance of the affected structure.

6.3.5 Fuel-tank bund joint repairs

- 18 The Contractor repairs defective joint sealants in the fuel-containment areas associated with:
 - a. Gas 1 Tank 1;
 - b. Gas 1 Tank 2;
 - c. Gas 1 Tank 3;
 - d. OCGT Tank A; and
 - e. OCGT Tank B.
- 19 Existing defective sealant and backing material are removed.
- 20 Joint substrates are prepared in accordance with Section 6.3.2.
- 21 The Contractor installs, as applicable:
 - a. closed-cell backing rod;
 - b. bond-breaker tape;
 - c. primer;
 - d. fuel-resistant elastomeric sealant; and
 - e. replacement waterstop or joint tape where required.
- 22 The completed sealing system is compatible with the hydrocarbon exposure, movement and substrate conditions and provides a continuous bonded seal.

6.3.6 Tank-to-foundation interface sealing

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- 1 The Contractor removes and replaces defective sealant at the interface between the tank-base annular plate and concrete foundation for:
 - a. Gas 1 Tank 1;
 - b. Gas 1 Tank 2;
 - c. Gas 1 Tank 3;
 - d. OCGT Tank A; and
 - e. OCGT Tank B.
- 2 The existing interface is inspected for:
 - a. cracking;
 - b. debonding;
 - c. hardening;
 - d. discontinuity; and
 - e. other deterioration affecting the integrity of the seal.
- 3 Existing sealant, debris and contaminants are removed without damaging the tank annular plate or concrete foundation.
- 4 Steel and concrete substrates are prepared in accordance with the proposed sealant Manufacturer's requirements.
- 5 Bond breaker or backing material is provided where required by the selected system.
- 6 The replacement sealant
 - a. is resistant to fuel and hydrocarbon exposure;
 - b. is compatible with steel and concrete;
 - c. is suitable for outdoor exposure; and
 - d. remains sufficiently flexible to accommodate movement at the interface.
- 7 The completed seal is finished to shed surface water away from the tank-foundation interface.

6.3.7 Cleaning and degreasing of Dirty Water Dams

- 1 The Contractor cleans and degreases the internal surfaces of the Ankerlig 1 and Ankerlig 2 Dirty Water Dams to remove oil, grease, hydrocarbon contamination, algae, biofilm and other contaminants which may interfere with inspection, assessment or subsequent repair work.
- 2 The cleaning or degreasing system is biodegradable, non-toxic and compatible with the existing concrete and subsequent repair materials.
- 3 Cleaning may be carried out by scrubbing, low-pressure washing, spraying or another suitable method appropriate to the condition being treated.
- 4 The Contractor allows the cleaning product to dwell and, where required, agitates and rinses the treated surface in a controlled manner.
- 5 Cleaning methods and products do not adversely affect:
 - a. the existing concrete substrate;
 - b. joints, waterstops or existing sealants which are to remain;
 - c. the subsequent condition assessment; or
 - d. the bond or performance of subsequent repair materials.

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- 6 Wash water, emulsified oils, sludge and residues arising from the cleaning operation are collected and controlled and are directed to the applicable existing oil-water separation system or another accepted containment arrangement.
- 7 Contaminated wash water, residues or sludge are not discharged to the clean stormwater system, soil or the environment.
- 8 Residues requiring off-Site disposal are handled, transported and disposed of in accordance with Section 2.5 and applicable law.

6.3.8 Underground stormwater drainage inspection and flushing

- 1 The Contractor carries out pre-cleaning inspection of the underground clean and dirty stormwater drainage systems using:
 - a. a cage-protected drone;
 - b. a camera inspection system; or
 - c. another suitable inspection technique accepted in accordance with this Works Information.
- 2 The Contractor may propose another suitable non-intrusive inspection technique where it can demonstrate that the proposed method will provide information equivalent to that required by this Works Information. The proposed alternative is submitted to the Project Manager for acceptance before use.
- 3 The pre-cleaning inspection records, as applicable:
 - a. the drainage route;
 - b. blockages or restrictions;
 - c. structural defects;
 - d. sediment and sludge accumulation;
 - e. oil-contaminated residue;
 - f. debris and foreign objects; and
 - g. photographic or video evidence.
- 4 The Contractor flushes and cleans affected drainage sections using:
 - a. high-pressure water jetting;
 - b. vacuum-assisted flushing; or
 - c. another suitable method.
- 5 Flushing and cleaning remove, as applicable:
 - a. sediment;
 - b. sludge;
 - c. organic material;
 - d. hydrocarbon-contaminated residue; and
 - e. debris or foreign objects.
- 6 Flushed material and wastewater are controlled, collected and managed so that contaminated material is not discharged to the environment or clean stormwater system.
- 7 After cleaning, the Contractor re-inspects the drainage section to verify:
 - a. removal of obstructions;
 - b. restoration of free-flowing conditions; and

- c. that the cleaning activity has not damaged the drainage system.
- 8 The Contractor submits the required pre-cleaning and post-cleaning reports, route records, photographs and video records.
- 9 Where the drainage inspection identifies structural defects or where a structural integrity assessment is required, the applicable report is prepared and signed by a Professional Civil Engineer or Professional Civil Engineering Technologist.

6.3.9 Subsoil drainage sump

- 1 Where the detailed condition assessment identifies a blocked subsoil drainage sump or associated drainage blockage, the Contractor unblocks and cleans the affected drainage path.
- 2 Material removed from the sump or drainage system is handled in accordance with the environmental and waste-management requirements of this Works Information.
- 3 Where inspection identifies structural damage or another defect requiring permanent repair, the Contractor records the condition and submits the proposed remedial measure before carrying out the repair

6.4 Electrical & mechanical engineering works

- 1 No separate permanent electrical engineering works are required under this contract.
- 2 No separate permanent mechanical engineering works are required under this contract, except where expressly stated elsewhere in this Works Information.
- 3 Pumps, hoses, temporary tanks, inspection equipment, drainage-cleaning equipment, lifting equipment and other temporary mechanical or electrical equipment used to Provide the Works remain Contractor's Equipment and are subject to Sections 3.6 and 4.6.
- 4 Where temporary electrical or mechanical connections are required to Provide the Works, the Contractor complies with the applicable Site permit, isolation, safety and operational requirements before making or using the connection.
- 5 Any temporary connection is removed and the affected interface reinstated when no longer required.
- 6 Any permanent alteration to existing electrical or mechanical Plant is carried out only where expressly required by this Works Information or instructed by the Project Manager

6.5 Process control and IT works

- 1 No process control, instrumentation or IT works are required under this contract unless expressly stated elsewhere in this Works Information.
- 2 Temporary cameras, drones, data-capture devices, computers, communications equipment and other electronic equipment used by the Contractor for inspection, recording, testing, reporting or contract administration remain Contractor's Equipment.
- 3 The Contractor does not connect to, modify, reconfigure or interfere with the Employer's process-control, instrumentation, telecommunications, network or IT systems unless expressly instructed by the Project Manager and authorised in accordance with the applicable Site requirements.

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- 4 Any temporary electronic or communications connection required for the Contractor's activities is subject to the Employer's applicable security, access and IT requirements.
- 5 Inspection video, photographs and electronic records generated as part of the works are managed in accordance with Sections 2.2, 5.1.8 and 3.8.

6.6 Applicable standards

The following standards apply to the works, as applicable to the relevant activity:

Standard	Description
SANS 2001-CC1	Construction works Part CC1: Concrete works (structural)
SANS 2001-CC2	Construction works Part CC2: Concrete works (minor works)
SANS 2001-EM1	Construction works Part EM1: Cement plaster
SANS 1200 – All Parts	Standardized specification for civil engineering construction
SANS 10100-2	The structural use of concrete Part 2: Materials and execution of work
SANS 5863	Non-destructive testing of concrete
ASTM C920	Elastomeric joint sealants
NEMA	National Environmental Management Act

7 List of drawings**7.1 Drawings issued by the Employer**

- 1 The drawings listed in this section are issued by the Employer and form part of the Works Information to the extent applicable to the Ankerlig works.
- 2 Some drawings may contain information relevant both to the Works Information and the Site Information.
- 3 The Contractor uses the drawings together with this Works Information.
- 4 The Contractor verifies accessible Site dimensions, levels and interfaces before carrying out the affected work in accordance with Sections 3.1, 5.1.13 and 5.1.14. Such verification does not transfer responsibility for the Employer's design to the Contractor.
- 5 Where the Contractor identifies an ambiguity, inconsistency or material difference between a drawing, this Works Information or the actual Site condition, it notifies the Project Manager before proceeding with the affected work.
- 6 A drawing or revised drawing issued after the Contract Date does not by itself change the Works Information. A change to the Works Information is instructed by the Project Manager in accordance with the conditions of contract

Drawing number	Revision	Title
0.86-1338	0	Dirty Stormwater Polluted Water Dam
0.866-1344	0	Dirty Stormwater Polluted Water Dam
0.86-5281	0	Dirty Stormwater Polluted Dam General Arrangement Plan

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0.86/872	1	Storage fuel tanks foundation section
0.88-842-1	Z	Dirty Stormwater Polluted Dam Layout Plan Setting Out Details
0.88-843	Z	Dirty Stormwater Polluted Dam Sump Detail
0.88-844	Z	Dirty Stormwater Polluted Dam Subsoil Drainage Sump
0.88-1944-1	Z	Dirty Stormwater Polluted Dam General Arrangement Plan
0.85/2201	0	Testing dam stairs & pump structures details
0.85-4195	0	Polluted water dam reinforcement details panel type 1
0.85-4258	0	Dirty stormwater polluted dam setting out
0.85/870	1	Storage fuel tanks retaining wall sections and details

C3.2 *CONTRACTOR'S* WORKS INFORMATION

This section of the Works Information will always be contract specific depending on the nature of the *works*.

It is most likely to be required for design and construct contracts where the tendering contractor will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical sub headings could be

- a) *Contractor's* design
- b) Plant and Materials specifications and schedules
- c) Other

This section could also be compiled as a separate file.

PART 4: SITE INFORMATION

Document reference	Title	No of pages
C4	This cover page	1
	Site Information	4
	Total number of pages	5

PART 4: SITE INFORMATION

The information in this Part C4 describes the Site and its surroundings as known to the Employer at the time of tender. Requirements governing how the Contractor Provides the Works are stated in Part C3: Works Information. Weather information used for compensation-event assessment is stated separately in the Contract Data.

1. General description

1. Ankerlig Power Station is located near Atlantis in the Western Cape Province and forms part of Eskom's peaking generation fleet. The station comprises nine (9) diesel-fired open-cycle gas turbine units constructed in two phases, namely Ankerlig 1 comprising four (4) units and Ankerlig 2 comprising five (5) units.
2. The parts of the Site relevant to this contract are the work areas identified in the Contract Data and Works Information, comprising:
 - the Ankerlig 1 Dirty Water Dam;
 - the Ankerlig 2 Dirty Water Dam;
 - the fuel-containment areas associated with Gas 1 Tanks 1, 2 and 3 and OCGT Tanks A and B;
 - the tank-to-foundation interfaces associated with those fuel-storage tanks; and
 - the associated underground clean and dirty stormwater drainage infrastructure.
3. Clean stormwater at Ankerlig is conveyed to the municipal stormwater system and to the pond adjacent to the Ankerlig 2 Dirty Water Dam. Dirty stormwater originating mainly from fuel and oil handling areas is collected through dedicated drainage networks and conveyed through oil-water separator systems to the dirty water dams.
4. Ankerlig Power Station is an operational power station. The work areas interface with existing Plant, roads, drainage systems, security-controlled areas and ongoing Power Station operations. Operational release and availability of the Ankerlig 1 and Ankerlig 2 work areas may be staged. The station is located within an environmentally sensitive area underlain by aquifers from which the City of Cape Town abstracts raw water for potable water treatment.

2. Existing buildings, structures, and plant & machinery on the Site

1. The principal existing assets and facilities relevant to the works are summarised below.

Existing asset / facility	Site information available at tender stage
Ankerlig 1 Dirty Water Dam	Existing concrete pollution-control dam with an approximate surface area of 4 152 m ² . Existing joints, waterstops, associated concrete structures, subsoil drainage features and other drainage interfaces form part of the asset.

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Existing asset / facility	Site information available at tender stage
Ankerlig 2 Dirty Water Dam	Existing concrete pollution-control dam with an approximate surface area of 7 058 m ² . Existing joints, waterstops, associated concrete structures, subsoil drainage features and other drainage interfaces form part of the asset.
Gas 1 Tanks 1 and 2	Existing diesel fuel-storage tanks, each approximately 15 050 mm diameter, with associated fuel-containment bunds approximately 31 300 mm x 52 300 mm.
Gas 1 Tank 3	Existing diesel fuel-storage tank approximately 21 300 mm diameter, with associated fuel-containment bund approximately 62 300 mm x 52 300 mm.
OCGT Tanks A and B	Existing diesel fuel-storage tanks, each approximately 15 050 mm diameter, with associated fuel-containment bunds approximately 31 300 mm x 52 300 mm.
Clean stormwater system	Existing underground clean-stormwater drainage infrastructure. The Engineering scope records that clean stormwater is conveyed to the municipal stormwater system and to the pond adjacent to the Ankerlig 2 Dirty Water Dam.
Dirty stormwater system	Existing underground dirty-stormwater drainage infrastructure including drainage routes, manholes/access points and oil-water separator interfaces conveying contaminated runoff toward the dirty water dams.

- A routine annual visual inspection was carried out before preparation of the Engineering scope. The dirty water dams were operational and were not emptied during that inspection, and the inspection was therefore limited to accessible areas. The full condition of the dam basins and sidewalls was not confirmed at that time.
- The visible defects and conditions recorded during the inspection included concrete spalling and delamination, deterioration or failure of joint sealants at the dirty water dams and fuel-oil tank bunds, joint movement including displaced or exposed expansion-joint boards, cracks at subsoil-drainage manholes and defective joint sealants to fuel-oil tank bund walls. The actual extent of concealed or inaccessible defects is not established by this Site Information.
- The following Employer drawings provide existing-asset and interface information relevant to the Site. These drawings are also referenced in the Works Information where applicable:

Drawing number	Revision	Title
0.86-1338	0	Dirty Stormwater Polluted Water Dam
0.866-1344	0	Dirty Stormwater Polluted Water Dam
0.86-5281	0	Dirty Stormwater Polluted Dam General Arrangement Plan
0.86/872	1	Storage fuel tanks foundation section
0.88-842-1	Z	Dirty Stormwater Polluted Dam Layout Plan Setting Out Details
0.88-843	Z	Dirty Stormwater Polluted Dam Sump Detail

REMEDIAL REPAIRS TO THE POLLUTION CONTROL DAMS, FUEL CONTAINMENT AREAS AND ASSOCIATED STORMWATER INFRASTRUCTURE AT ANKERLIG POWER STATION

Drawing number	Revision	Title
0.88-844	Z	Dirty Stormwater Polluted Dam Subsoil Drainage Sump
0.88-1944-1	Z	Dirty Stormwater Polluted Dam General Arrangement Plan
0.85/2201	0	Testing dam stairs & pump structures details
0.85-4195	0	Polluted water dam reinforcement details panel type 1
0.85-4258	0	Dirty stormwater polluted dam setting out
0.85-4260	0	Testing dam & berm layout and details
0.85/870	1	Storage fuel tanks retaining wall sections and details

3. Subsoil information

1. No geotechnical investigation report, borehole records or laboratory ground-test results are provided by the Employer as Site Information for the work areas covered by this contract.
2. The works are principally repairs to existing dams, fuel-containment structures, tank-to-foundation interfaces and existing drainage infrastructure. The actual subsurface conditions beneath or adjacent to those existing assets have not been independently established for this tender.
3. Although the Engineering scope records that Ankerlig Power Station is underlain by aquifers used by the City of Cape Town for raw-water abstraction, no detailed hydrogeological investigation, groundwater-level information or groundwater-monitoring data are provided by the Employer as Site Information under this Part C4.
4. Where local excavation or exposure is required to Provide the Works, the actual condition encountered will only become apparent when the relevant work area is opened or exposed. Requirements for excavation, protection of existing infrastructure and notification of differing conditions are stated in Part C3: Works Information.

4. Hidden services

1. No complete verified composite survey showing the exact position, depth and level of all underground or concealed services within the work areas is provided as Site Information.
2. Known existing infrastructure within Ankerlig Power Station includes underground clean and dirty stormwater drainage systems, manholes and access chambers, oil-water separator interfaces, subsoil drainage manholes and other operational pipes, cables, ducts and services associated with the Power Station. Such services may occur within or adjacent to the work areas.
3. The issued drawings and visible service features provide information on certain existing assets and drainage infrastructure. The exact location, depth and level of all services are not warranted by the Employer under this Part C4. The absence of a service from the information listed in this Part C4 is not confirmation that no service is present in a particular work area.
4. For tender purposes, existing operational services are to be regarded as remaining in service unless the Works Information or an operational release specifically identifies an isolation or interruption. Requirements for locating, protecting and working near existing services are stated in Part C3: Works Information.

**REMEDIAL REPAIRS TO THE POLLUTION CONTROL DAMS, FUEL CONTAINMENT AREAS AND ASSOCIATED
STORMWATER INFRASTRUCTURE AT ANKERLIG POWER STATION****5. Other reports and publicly available information**

1. Weather information is not included in this Part C4. The weather measurements and historical weather-data source used for assessment under clause 60.1(13) are stated in the Contract Data and are based on official South African Weather Service data for the weather station nearest to Ankerlig Power Station that provides the stated measurements and sufficient historical records.
2. No additional geotechnical, geological, hydrographic or hydrological reports are provided by the Employer as Site Information under this Part C4.