

**SITE RESTORATION
AND ABANDONMENT GUIDELINES
FOR
PETROLEUM OPERATIONS**

April, 2018

Table of Contents

SITE RESTORATION AND ABANDONMENT GUIDELINES FOR PETROLEUM OPERATIONS

S. No.	Topic	Page
1.	Introduction	3
2.	Government authorities and their respective roles on the Abandonment Plan	3
3.	Regulatory Requirements	4
4.	Environmental Impact Assessment (EIA).....	5
5.	Handling of Naturally Occurring Radioactive Material (NORM)	5
6.	Site Restoration Fund.....	5
7.	Commencement of Site Abandonment.....	6
8.	Guidelines for Decommissioning Offshore Production Sites in India	7
9.	Guidelines for Decommissioning Onshore Production Sites in India	14

1. Introduction

The following sections refer to both offshore and onshore oil and gas production site abandonment. These guidelines are not prescriptive but allow flexibility within the existing regulatory framework.

Note: Various terms such as Site Restoration Plan, Abandonment Plan, Decommissioning Plan, Site Restoration, Abandonment and Decommissioning Plan, are used interchangeably. However, they all mean the same document.

2. Government authorities and their respective roles on the Abandonment Plan

The responsibilities of various authorities listed below are categorized into the following.

- i. Approval role: These authorities will need to approve the Abandonment Plan.
- ii. Consulting role: These authorities will play an advisory role, providing their inputs on the Abandonment Plan, if any, in a time bound manner.
- iii. Information only: These authorities will be informed of the Abandonment Plan.

The Abandonment Plan will be submitted to the Oil Industry Safety Directorate (OISD) (for offshore production sites only)/ Directorate General of Mines Safety (DGMS) (for onshore production sites only) with a copy to the authorities with 'consulting role' for comments, if any, within 45 days of submission of Abandonment Plan in line with the guidelines.

- Ministry of Petroleum & Natural Gas (MoPNG) – Approval role [through Management Committee (MC)]
- Directorate General of Hydrocarbons (DGH) – Approval role (through MC)
- Directorate General of Mines Safety (DGMS) – Approval role (for onshore production sites only)
- Oil Industry Safety Directorate (OISD) – Approval role (for offshore production sites only)
- Ministry of Defence (MoD) – Consulting role (for offshore production sites only)
- Ministry of Shipping (MoS) – Consulting role (for offshore production sites only)
- Department of Animal Husbandry, Dairying and Fisheries (DoF) within the Ministry of Agriculture and Farmers Welfare (MoA&FW) – Consulting role (for offshore production sites only)
- State Pollution Control Boards (SPCB) – Consulting role (for onshore production sites and offshore production sites up to 12 nautical miles/ jurisdiction of EP Act)

- State maritime board - Consulting role for offshore production sites only
- Ministry of Water Resources - Information only (for onshore production sites only)
- State Governments (concerned departments) - Information only (for onshore production sites only)
- Coastal State Government nearest to the offshore production site – Information only (for offshore production site only)
- State, District and Local Authorities/Concerned departments - Information only (for onshore production sites only)

During project execution, necessary permits and consents would have to be taken by the Contractors from relevant authorities in line with existing rules and regulations.

3. Regulatory Requirements

It is essential that the Contractor carrying out a decommissioning project has a clear understanding of relevant regulations.

Administration of a decommissioning project should not be strictly limited to regulations. In addition to the regulations, an attempt should be made to provide relevant background information and asset history. Additionally, consideration should be given to issues which impact decommissioning activities. These include, but are not limited to, certain provisions regarding impact on land, protected areas, water and endangered species and artificial reef programs.

The regulations with respect to decommissioning of offshore production sites shall be administered by the Oil Industry Safety Directorate (OISD) while the Directorate General of Mines Safety (DGMS) shall administer decommissioning of onshore production sites. In addition, it is envisaged that establishment of artificial reefs for offshore platforms shall be administered by the OISD.

Note 1: These Site Restoration Guidelines for Petroleum Operations are applicable only for field abandonment upon cessation of production from producing fields only. However, the Contractor shall have the flexibility to carry out well Plugging and Abandonment (P&A) and flushing/ cleaning activities on a *stand-alone* basis with the approvals from the Management Committee.

Note 2: The Contractor shall submit the third party audit report on the contractor's work completion dossier to OISD/DGMS and DGH which shall be considered as certification of completion of the site restoration/decommissioning/ abandonment work.

4. Environmental Impact Assessment (EIA)

Currently, there are no specific guidelines in India for Environmental Impact Assessments for decommissioning of oil and gas assets. Minimum requirements should therefore be determined and EIA for offshore and onshore oil and gas producing assets to be abandoned should be formulated.

The EIA for the selected decommissioning methodology should take into account environment protection measures and EIA report for the selected concept will be submitted by the Contractor to DGMS/OISD along with site restoration plan.

5. Handling of Naturally Occurring Radioactive Material (NORM)

Identifying, labeling, maintaining, storing and disposing of equipment contaminated with Naturally Occurring Radioactive Material (NORM) shall follow the guidelines of the Department of Atomic Energy (DAE).

6. Site Restoration Fund

The Site Restoration Fund ("SRF"), where applicable, is governed by the relevant provisions of the respective Production Sharing Contracts (PSCs) and the Site Restoration Fund Scheme (SRFS) of 1999. Regarding Site Restoration Fund, following guidelines are made:

- Contractor will open SRF account immediately after first commercial oil/gas production.
- In the case of new fields, Contractor can alternatively submit Bank Guarantee (BG) for the initial period up to 3 years after first commercial oil/gas production. The Contractor shall create SRF account for the subsequent years of PSC period.
- In the case of existing fields with commercial production, where SRF is not yet established, the Contractor can alternatively submit Bank Guarantee within 6 months after policy guidelines notification for a period up to 3 years. The Contractor shall create SRF account for the subsequent years of PSC.
- The Amount of SRF or BG will be in accordance with decommissioning estimates as proposed by the Contractor and approved by Management Committee.
- The funding in SRF account or BG amount will be calculated using Unit of Production method i.e. Reserve of the field to Production ratio.
- Due to the varying operating lives of individual assets and changes in resource costs, decommissioning and site restoration costs may be evaluated and updated every 3 years. The decommissioning cost estimate, duly assessed by a qualified independent third party, will be submitted by the Contractor to the DGH. The revised estimates will become the basis for amount in SRF or BG.

The withdrawal of funds from SRF account is governed by para 8 of the SRFS of 1999. To provide further guidance in accordance with para 8, it is recommended that the following additional steps need to be followed:

- a. The Contractor shall propose estimates of the site restoration activities in the Annual Work Programme & Budget (WP&B) to the Management Committee

including provisional work schedule and corresponding estimated payment on a Financial Year Basis.

- b. Based on such approved Work Programme and Budget (WP&B), the Contractors would be allowed to withdraw funds in four or more phases from SRF account towards expenditure. The Contractors shall submit to the DGH, a phase-wise utilization Certificate validated by independent third party who is acceptable to Management Committee, showing utilization of funds during or at the end of each phase. For release of advance for subsequent phase, Contractor to ensure that utilization Certificate is submitted for 75% of the funds drawn for the current phase and 100% of the funds drawn for all previous phases. As an alternative, the contractor shall have an option of withdrawing an advance of up to 100% of the fund required for Site restoration and abandonment as per the plan approved by the Management Committee by submitting Bank Guarantee of an equivalent amount.
- c. Within 60 days after end of a financial year, the Contractors should submit final expenditure and utilization statement for previous year.
- d. In case of BG amount, the BG amount can be adjusted/ reduced (on pro-rata basis) by the Contractor on an annual basis at the end of the financial year in accordance with the value of balance site restoration work to be completed as per the approved Abandonment Plan.
- e. The Contractor would undertake site abandonment activities as per the approved Abandonment Plan and submit the completion certificate.
- f. The contributions to the SRF account should be used only for the purpose of Field Abandonment & Site Restoration by all parties. The balance amount in SRF after Site restoration and abandonment shall be dealt with in accordance with provisions of PSC and SRF Scheme, 1999.

7. Commencement of Site Abandonment

Regarding notice to the Government for commencement of site abandonment and approval of the Site Restoration Plan, following guidelines are made:

- An estimated high level schedule for the abandonment should be submitted to the DGH for review one (1) year prior to the expected cessation of production. Shorter time frames may be allowed by DGH if necessary.
- The Site Abandonment and Restoration Plan should be submitted to the OISD/DGMS for approval not later than 1 year after cessation of production.
- Abandonment Plan shall be approved by the OISD/DGMS within 60 days of submission of the Abandonment Plan by the Contractor in line with these guidelines. In case OISD/DGMS has any query regarding any deficiencies in the documentation, the approval shall be granted by OISD/DGMS within 15 days of receipt of the satisfactory reply and correct relevant document from the Contractor.
- Initiation of abandonment should begin as per timelines approved in the

Abandonment Plan, subject to all regulatory approvals, permits, clearances etc being granted in a timely manner.

8. Guidelines for Decommissioning Offshore Production Sites in India

SECTION 1. Definitions

(a) Decommissioning means:

- (1) Ending oil or gas operations; and
- (2) Returning the lease to a condition that meets the requirements of the regulations and other agencies that have jurisdiction over decommissioning activities.

(b) Obstructions means:

Structures, equipment, or objects that were used in oil and gas operations or marine growth on such structures that, if left in place, would substantially hinder other existing users of the seafloor, may be considered as an obstruction. Such obstructions may include, but are not limited to, shell mounds, wellheads, casing stubs, mud line suspensions, well protection devices, subsea trees, jumper assemblies, umbilicals, manifolds, termination skids, production and pipeline risers, platforms, templates, pilings, pipelines, pipeline valves, and power cables.

SECTION 2. Cessation of Production

Within 180 days upon cessation of production Contractor shall notify the MoP&NG/ DGH/ OISD, that all production of the facility has ceased and submit the Abandonment plan to the OISD within one year of cessation of production.

SECTION 3. General Decommissioning Requirements

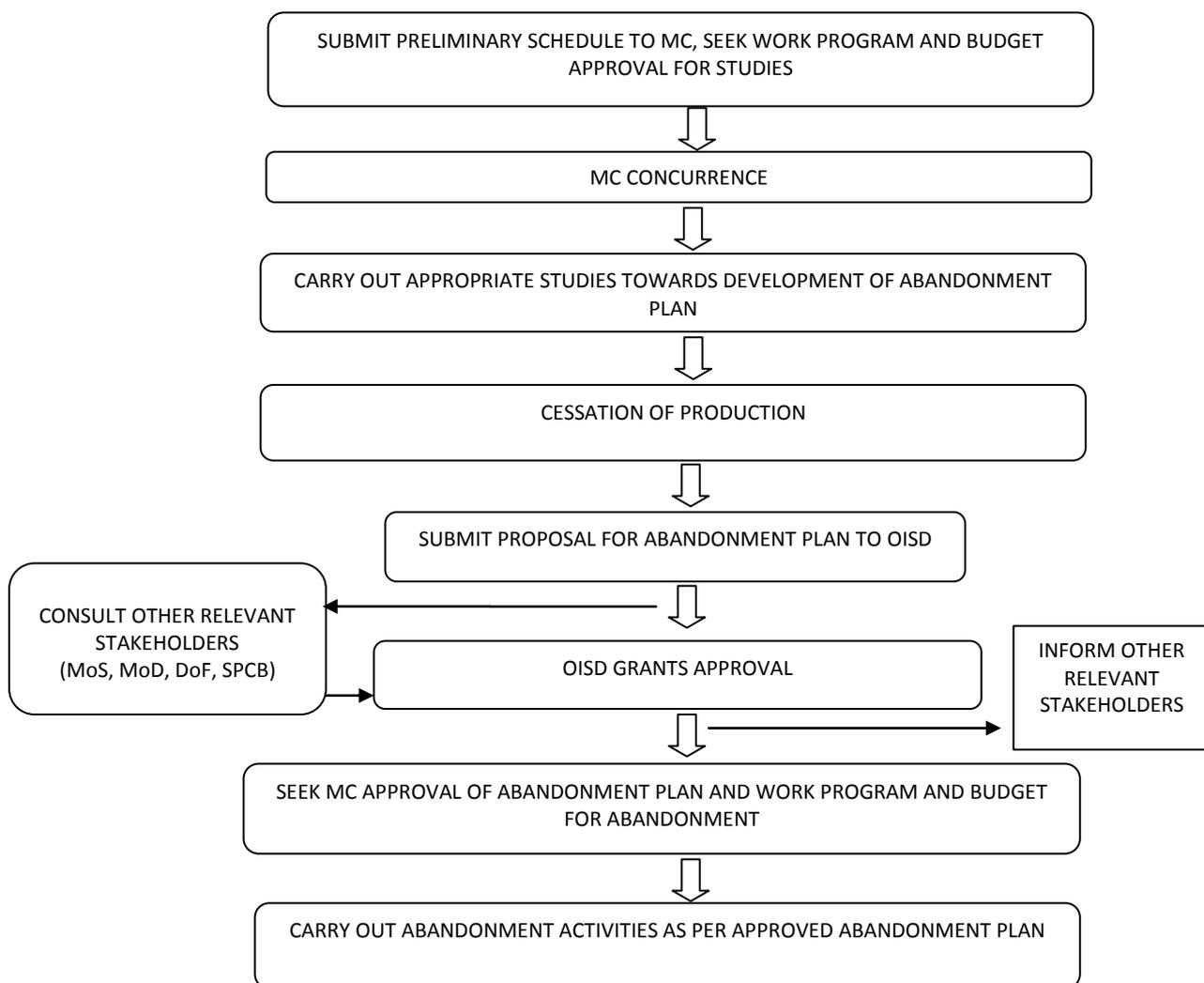
The guidelines on decommissioning requirements are as follows.

- Decommission wells by permanently plugging the wells. Sub-sea well head structures, Christmas trees, casings and tubings can be left in-situ provided they are stable in place and they do not have significant risk of interference with potential users of the site. The decommissioning methodology for Sub-sea well head structures, Christmas trees, casings and tubings shall be decided by a transparent and objective comparative assessment process which will take into account factors including geotechnical aspects, erosion processes, environmental considerations and safety etc.
- Platforms may be removed as per IMO resolutions / guidelines. Reefing may be permitted if considered environmentally beneficial.
- Subsea hardware and pipelines are to be decommissioned and left in-situ, provided the geotechnical, engineering analysis and other information demonstrate that hardware and pipelines are stable. The pipeline decommissioning methodology shall

be decided by a transparent and objective comparative assessment process which will take into account factors including geotechnical aspects, erosion processes, environmental considerations and safety etc.

- Where piling or conductors are severed, these should be removed to a level at or below the mud line.
- Conduct all decommissioning activities in a manner that is safe, does not unreasonably interfere with other uses of the seafloor, and does not cause undue or serious harm or damage to the human, marine, or coastal environment.

SECTION 4. Application Process for Decommissioning of Offshore production sites



SECTION 5. Well Plug and Abandonment

Wells P&A shall be carried out in accordance with OISD Standard 175. Deviations from OISD standard 175, if any, shall be submitted to the OISD for approval on a case to case basis.

Rigless well abandonment is a viable option. The Contractors should have the option to abandon a well in the most economical, safe manner of their choice. Project specific procedures for Rigless P&A shall be submitted to OISD for approval.

Each Reservoir isolation plug(s) must pass one or both of the following tests to verify plug integrity:

- A pipe weight of at least 15,000 pounds on the plug; or
- A pump pressure of at least 1,000 pounds per square inch. Ensure that the pressure does not drop more than 10 percent in 15 minutes.

SECTION 6. Decommissioning platforms and other facilities

All platforms and other facilities must be decommissioned as per the approved Abandonment Plan.

All production risers must be flushed with seawater before they are removed.

SECTION 7. Information to be included in Abandonment Plan for a Platform or other facility

Submit the following information (as relevant) as part of the Abandonment Plan for approval to the OISD:

(a) Identification of the applicant including:

- (1) Contractor;
- (2) Address;
- (3) Contact person and telephone number, email, fax and
- (4) Shore base.

(b) Identification of the structure that will be decommissioned including:

- (1) Platform Name
- (2) Location (lease, area, block, and block coordinates);
- (3) Date installed (year);
- (4) Proposed date of decommissioning (Month/Year); and
- (5) Water depth.

(c) Description of the structure to be decommissioned including:

- (1) Configuration (attach a photograph or a diagram);
- (2) Size;
- (3) Number of legs/casings/pilings;
- (4) Diameter and wall thickness of legs/casings/pilings;
- (5) Whether piles are grouted;
- (6) Brief description of soil composition and condition;
- (7) The sizes and weights of the jacket, topsides (by module), conductors, and pilings; and

(d) Identification of the purpose, including:

- (1) Lease expiration date; and
- (2) Reason for removing the structure.

(e) An overview of the removal method,

(f) Plans for transportation and disposal (including as an artificial reef) or salvage of the removed platform.

(g) The results of any recent biological surveys conducted in the vicinity of the structure and recent observations of turtles or marine mammals at the structure site.

(h) Plans to protect archaeological and sensitive biological ecosystem during removal operations, including a brief assessment of the environmental impacts of the removal operations and procedures and mitigation measures to take to minimize such impacts.

(i) A statement whether or not divers will be used to survey the area after removal to determine any effects on marine life.

SECTION 8. Information to be submitted once a platform or other facility has been decommissioned.

Within 90 days after the decommissioning of a platform or other facility, submit a written report to the OISD that includes the following:

- (a) A summary of the decommissioning operation including the date it was completed;
- (b) A description of any mitigation measures taken; and
- (c) A statement signed by an authorized representative that certifies that the types and amount of explosives used in removing the platform or other facility were consistent with those set forth in the approved Abandonment Plan.

SECTION 9. Decommissioning Pipelines

Pipelines are to be decommissioned and left in-situ

To decommission a pipeline in-place:

(a) Submit the following information as part of the Abandonment Plan for approval to the OISD:

- (1) Reason for the operation;
- (2) Proposed decommissioning procedures;
- (3) Length (meters) of segment to be decommissioned.
- (4) Plans for disposal and salvage
- (5) Stretch of pipeline passing through eco-sensitive areas like national parks, wildlife sanctuaries and protected areas etc at land fall point and plan of their protection.

(b) Pig the pipeline, unless pigging is not practical;

(c) Flush the pipeline;

(d) Fill the pipeline with seawater;

(e) Cut and plug each end of the pipeline;

(f) Where required, bury each end of the pipeline at least 1 meter below the seafloor or cover each end with sand/ concrete mattress;

(g) Remove those pipeline valves and other fittings that could unduly interfere with other uses of the seafloor.

SECTION 10. Post Pipeline Decommissioning

Within 90 days after the completion of pipeline decommissioning, submit a written report to the OISD that includes the following:

- (a) A summary of the decommissioning operation including the date it was completed;
- (b) A description of any mitigation measures taken; and
- (c) A statement signed by an authorized representative that certifies that the pipeline was decommissioned according to the approved Abandonment Plan.

SECTION 11. Site Clearance Requirements of a Permanently Plugged Well, Removed Platform, or Other Removed facility

After completion of abandonment activities, verify that the site is clear of obstructions by using one of the following methods:

If used--	Must--	And must--
(a) Sonar	Cover 100 per cent of the appropriate grid area.	Use a sonar signal with a frequency of at least 500 kHz.
(b) A diver	Ensure that the diver visually inspects 100 per cent of the appropriate grid area.	Ensure that the diver uses a search pattern of concentric circles or parallel lines spaced no more than 3 meters apart.
(c) An ROV (remotely operated vehicle).	Ensure that ROV camera records videotape over 100 per cent of the appropriate grid area.	Ensure that the ROV uses a pattern of concentric circles or parallel lines spaced no more than 3 meters apart.

SECTION 12. Post Site Clearance and Verification

(a) For a well site, submit a Completion Letter within 90 days after completion of the verification activities, to include:

- (1) A signed certification that the well site area is cleared of all obstructions;
- (2) The date the verification work was performed and the vessel used;
- (3) The extent of the area surveyed;
- (4) The survey method used.

(b) For a platform or other facility site, submit a Completion Letter within 90 days after the completion of the verification activities, to include:

- (1) A letter signed by an authorized company official certifying that the platform or other facility site area is cleared of all obstructions and that a company representative witnessed the verification activities;
- (2) A letter signed by an authorized official of **the third-party company** that performed the verification work certifying that the platform or other facility site has been cleared of all obstructions;
- (3) The date the verification work was performed and the vessel used;
- (4) The extent of the area surveyed;
- (5) The survey method used.

Note 1: Within 180 days of carrying out site clearance, the Contractor shall **submit the third party audit report** on the contractor's work completion dossier to OISD/DGH which shall be considered as certification of completion of work.

SECTION 13. Monitoring and Survey Requirements of Abandoned Pipelines

- (a) Perform an environmental and stability baseline survey.
- (b) A pipeline location survey should also be carried out by the Contractor to establish stability of the abandoned pipelines, after at least one monsoon season has elapsed since the abandonment of such pipelines.
- (c) Post abandonment monitoring is not necessary.

9. Guidelines for Decommissioning Onshore Production Sites in India

The MoPNG should consider formulating legislation that grants DGMS authority over regulating decommissioning onshore production sites.

SECTION 1. Definitions

(a) Authorized administrative representative means:

Any entity or individual authorized by the GOI to perform duties by cooperative agreement, delegation or contract.

(b) Fresh water means:

Water containing not more than 1,000 ppm of total dissolved solids, provided that such water does not contain objectionable levels of any constituent that is toxic to animal, plant or aquatic life, unless otherwise specified in applicable notices or orders.

(c) Contractor means:

As defined in the PSC.

SECTION 2. Well Plugging and Abandonment

Wells must be permanently plugged after the production has ceased.

Before permanently plugging a well or zone, submit an application to plug and abandon to DGMS and obtain approval. A request for approval must include the following information:

(a) Reason for plugging the well (or zone), along with information signifying its lack of capacity for further profitable production of oil or gas

(b) Recent well test data and pressure data, if available;

(c) Maximum possible surface pressure, and how it was determined;

(d) Type and weight of well-control fluid to be used;

(e) A description of the work; and

(f) A current and proposed well schematic and description that includes:

(1) Well depth;

(2) All perforated intervals that have not been plugged;

- (3) Casing and tubing depths and details;
- (4) Subsurface equipment;
- (5) Estimated tops of cement (and the basis of the estimate) in each casing annulus;
- (6) Plug locations;
- (7) Plug types;
- (8) Plug lengths;
- (9) Properties of mud and cement to be used;
- (10) Perforating and casing cutting plans;
- (11) Plug testing plans;
- (12) Environmental status in the vicinity wrt National parks, wildlife sanctuaries and protected areas and plan to minimize the impact.

Note: Rigless Well abandonment is a viable option. The Contractors should have the option to abandon a well in the most economical, safe manner of their choice. Project specific procedures for Rigless P&A shall be submitted to DGMS for approval.

SECTION 3. Permanent Well Plugging Requirements

- (a) Ensure that all well plugs
 - (1) Provide downhole isolation of hydrocarbon and zones;
 - (2) Protect freshwater aquifers; and
 - (3) Prevent migration of formation fluids within the wellbore or to the surface.
- (b) Permanently plug wells according to the table given below.

PERMANENT WELL PLUGGING REQUIREMENTS

If –	Then use--
(1) Zones in open hole	Cement plug(s) set from at least 30 meters below the bottom to 30 meters above the top of oil, gas, and fresh-water zones to isolate fluids in the strata.

If –

Then use--

(2) Open hole below casing

(i) A cement plug, set by the displacement method, at least 30 meters above and below deepest casing shoe;

(ii) A cement retainer with effective back- pressure control set 15 to 30 meters above the casing shoe, and a cement plug that extends at least 30 meters below the casing shoe and at least 15 meters above the retainer; or

(iii) A bridge plug set 15 meters to 30 meters above the shoe with 15 meters of cement on top of the bridge plug, for expected or known lost circulation conditions.

(3) A perforated zone that is currently open and not previously squeezed or isolated.

(i) A method to squeeze cement to all previously squeezed or isolated perforations;

(ii) A cement plug set by the displacement method, at least 30 meters above to 30 meters below the perforated interval, or down to a casing plug, whichever is less; or

(iii) If the perforated zones are isolated from the hole below, use any of the plugs specified in paragraphs (b)(3)(iii)(A) through (E) of this section instead of those specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(A) A cement retainer with effective back-pressure control set 15 to 30 meters above the top of the perforated interval, and a cement plug that extends at least 30 meters below the bottom of the perforated interval with at least 15 meters of cement above the retainer;

(B) A bridge plug set 15 to 30 meters above the top of the

If –

Then use--

perforated interval and at least 15 meters of cement on top of the bridge plug;

(C) A cement plug at least 60 meters in length, set by the displacement method, with the bottom of the plug no more than 30 meters above the perforated interval;

(D) A through-tubing basket plug set no more than 30 meters above the perforated interval with at least 15 meters of cement on top of the basket plug; or

(E) A tubing plug set no more than 30 meters above the perforated interval topped with a sufficient volume of cement so as to extend at least 30 meters above the uppermost packer in the wellbore and at least 90 meters of cement in the casing annulus immediately above the packer.

(4) A casing stub where the stub end is within the casing

i) A cement plug set at least 30 meters above and below the stub end;

(ii) A cement retainer or bridge plug set at least 15 to 30 meters above the stub end with at least 15 meters of cement on top of the retainer or bridge plug; or

(iii) A cement plug at least 60 meters long with the bottom of the plug set no more than 30 meters above the stub end.

(5) A casing stub where the stub end is below the casing

A plug as specified in paragraph (b) (1) or (b)(2) of this section, as applicable.

If –

Then use--

(6) An annular space that communicates with open hole and extends to the mud line.

A cement plug at least 60 meters long set in the annular space. For a well completed above the ocean surface, test the pressure test of each casing annulus to verify isolation.

(7) A well with casing

A cement surface plug at least 20 meters long set in the smallest casing that extends to surface with the top of the plug no more than 10 meters below the surface.

(8) Fluid left in the hole

A fluid in the intervals between the plugs that is dense enough to exert a hydrostatic pressure that is greater than the formation pressures in the intervals.

(c) Reservoir isolation plug(s) must pass one of the following tests (each) to verify plug integrity:

- A pipe weight of at least 15000 pounds on the plug; or
- A pump pressure of at least 1,000 pounds per square inch. Ensure that the pressure does not drop more than 10 percent in 15 minutes.

SECTION 4: Wellhead, Casing Removal and Site Restoration

Remove wellhead and all casings at least 1.5 m below the Ground level.

Alternate removal depth, if any required, to be mutually agreed and approved on case to case basis.

Clear the well site and restore the land near to original condition or as mutually agreed with land owners/local authorities.

Provide information on ecologically sensitive areas in the vicinity such as protected areas, national parks, Sanctuaries etc. and plans to minimize the impact.

SECTION 5. Well Plugging Completion Submittal

Within 90 days after permanently plugging a well, submit a post job report, and include the following information:

- (1) Information furnishing actual well coordinates and locality
- (2) Final well schematic showing the actual locations of the plugs;
- (3) Description of the plugging work;
- (4) Nature and quantities of material used in the plugs;
- (5) Size and length of casing cut;
- (6) Casing removal depth.
- (7) Details on the well cap.

SECTION 6. Temporary Well Abandonment

A well may be temporarily abandoned when it is necessary for proper development and production of a lease. Following guidelines may be followed:

(a) Submit application for Well Modifications, and the applicable information as per OMR to DGMS and receive approval;

(b) No need to cut and remove the wellhead;

(c) Set a bridge plug or a cement plug at least 30 meters long at the base of the deepest casing string, unless the casing string has been cemented and has not been drilled out. If a cement plug is set, it is not necessary for the cement plug to extend below the casing shoe into the open hole;

(d) Test the first plug below the surface plug and all plugs in lost circulation areas that are in open hole. The plug must pass one of the following tests to verify plug integrity:

- A pipe weight of at least 15000 pounds on the plug; or
- A pump pressure of at least 1,000 pounds per square inch. Ensure that the pressure does not drop more than 10 percent in 15 minutes.

(e) Set a retrievable or a permanent-type bridge plug or a cement plug at least 30 meters long in the inner-most casing. The top of the bridge plug or cement plug must be no more than 20 meters below the surface (GL).

(f) Provide well identification with details.

(g) Within 90 days after temporarily plugging a well, submit the form for Well Modifications, and include the well details with the as plugged schematic;

When is it no longer necessary to maintain a well in temporary abandoned status:

- (a) Promptly and permanently plug the well according to relevant standards.
- (b) Clear the well site and restore the land near to original condition or as mutually agreed with land owners/local authorities.

SECTION 7: Decommissioning of Oil / Gas Plant and Restoring the Land

Decommissioning includes closing of wells, facility shut-down and de-pressurizing, pigging and flushing of trunk lines, plant isolation and flushing, purging and cleaning of plant equipment, vessels and associated piping.

1. Onshore Gas Plant Isolation:

The positive isolation of all the different sections of the plant has to be achieved prior to purging to eliminate all the hydrocarbon sources to the plant. Such as trunk lines to be disconnected from ESDV to isolate the plant from other sources of hydrocarbon flowing in to the plant. Well header(s) to be disconnected to isolate all the wells. Test separator header/separators to be disconnected up to ESDV. Custody meter run to be disconnected to isolate the source from downstream.

2. Flushing, Purging and cleaning of Pipelines, Vessels and Equipment:

As part of decommissioning; flushing, purging and cleaning needs to be carried out following cessation of production. Pipelines, vessels and equipment will be depressurized and any bulk hydrocarbons present there in will be removed. Subsequently the hydrocarbon lines should be mechanically isolated for any accidental ingress of hydrocarbon. Thoroughly cleaning and purging is to be carried out to ensure removal of hydrocarbons/pollutants so no hazards exist during dismantling and site restoration. The cleaning programme to be developed based on the specific needs of each system/loop and should be approved internally by a competent authority.

3. Waste Management and Site Restoration:

Abandonment plan should consider alternate in situ use of buildings and structures. If alternate use is not possible, these structures should be dismantled, cleaned, and removed, in accordance with the agreement with land owners/ land lease agreements.

All equipment and vessels will be disconnected, cleaned, dismantled and disposed of as per the approved abandonment plan.

Ensure Asbestos is not present or that proper measures are taken to remove if present.

Clear and restore the site as mutually agreed with land owners/ local authorities.

Verify by nodal authority validating that the site has been properly remediated and restored.

SECTION 8: Abandonment of Pipelines

(a) Each Contractor shall conduct abandonment or deactivation of pipelines in accordance with the requirements of this section.

(b) Each pipeline abandoned in-situ must be disconnected from all sources and supplies of gas, purged of gas. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard.

(c) Except for service lines, each inactive pipeline that is not being maintained under this part must be disconnected from all sources and supplies of gas. However, the pipeline need not be purged when the volume of gas is so small that there is no potential hazard.

(d) Whenever service to a customer is discontinued, one of the following must be complied with:

(1) The valve that is closed to prevent the flow of gas to the customer must be provided with a locking device or other means designed to prevent the opening of the valve by persons other than those authorized by the Contractor.

(2) A mechanical device or fitting that will prevent the flow of gas must be installed in the service line or in the meter assembly.

(3) The customer's piping must be physically disconnected from the gas supply and the open pipe ends sealed.

(e) If air is used for purging, the Contractor shall insure that a combustible mixture is not present after purging.

(f) Each abandoned vault must be filled with a suitable compacted material.

SECTION 9: Site Restoration

After bringing the site to an environmentally safe condition,

- Restore the site to a condition as mutually agreed with land owners/ local authorities.

Liquid and solid waste should be safely disposed of in accordance with Indian environmental regulations.

A letter signed by an authorized official of **the third-party company** that the site has been restored and cleared of all obstructions.

SECTION 10: Application Process for Decommissioning Onshore Production Sites

