

July 12, 1999

ACTION PLAN
FOR ADDRESSING PACIFIC REGION
OFFSHORE OIL AND GAS FACILITY DECOMMISSIONING ISSUES

Introduction

The Minerals Management Service (MMS) and the California State Lands Commission (SLC) jointly sponsored a public workshop in September of 1997 entitled "Decommissioning and Removal of Oil and Gas Facilities Offshore California: Recent Experience and Future Deepwater Challenges." The workshop was structured to disseminate information, identify issues, and elicit recommendations from the public on the technical, environmental, and material disposal aspects of decommissioning operations. On November 19, 1997, MMS and SLC hosted a meeting of Federal, State, and local government agencies to review the results of the workshop and discuss development of an action plan for addressing decommissioning issues. During the meeting the agencies agreed to form an Interagency Decommissioning Working Group (IDWG) to prioritize issues and develop an action plan to address the issues. This document sets forth the goals of the action plan, prioritizes the issues identified during the workshop, and describes a course of action for addressing the issues. The plan was prepared to guide agency efforts in addressing the technical, environmental, disposition, and site clearance issues associated with decommissioning operations. **The plan does not provide a mechanism for resolving policy related issues such as rigs-to-reef and coastal resource enhancement but it does identify information needs relative to policy issues that the IDWG can address.** The IDWG does not have the authority to develop recommendations on policy or resolve policy related conflicts. Jurisdiction over such matters rests with the respective government agencies and their executive and/or legislative branches. Members of the IDWG are listed in Appendix I.

Goals of the Action Plan

The goals of the action plan are to develop a process for:

- (1) addressing issues identified during the September 1997 Decommissioning Workshop
- (2) collecting, disseminating, and sharing information with all interested parties
- (3) promoting dialogue and open communication among all parties
- (4) improving interagency planning and coordination in advance of future decommissioning projects

July 12, 1999

ACTION PLAN
FOR ADDRESSING PACIFIC REGION
OFFSHORE OIL AND GAS FACILITY DECOMMISSIONING ISSUES

Introduction

The Minerals Management Service (MMS) and the California State Lands Commission (SLC) jointly sponsored a public workshop in September of 1997 entitled "Decommissioning and Removal of Oil and Gas Facilities Offshore California: Recent Experience and Future Deepwater Challenges." The workshop was structured to disseminate information, identify issues, and elicit recommendations from the public on the technical, environmental, and material disposal aspects of decommissioning operations. On November 19, 1997, MMS and SLC hosted a meeting of Federal, State, and local government agencies to review the results of the workshop and discuss development of an action plan for addressing decommissioning issues. During the meeting the agencies agreed to form an Interagency Decommissioning Working Group (IDWG) to prioritize issues and develop an action plan to address the issues. This document sets forth the goals of the action plan, prioritizes the issues identified during the workshop, and describes a course of action for addressing the issues. The plan was prepared to guide agency efforts in addressing the technical, environmental, disposition, and site clearance issues associated with decommissioning operations. **The plan does not provide a mechanism for resolving policy related issues such as rigs-to-reef and coastal resource enhancement but it does identify information needs relative to policy issues that the IDWG can address.** The IDWG does not have the authority to develop recommendations on policy or resolve policy related conflicts. Jurisdiction over such matters rests with the respective government agencies and their executive and/or legislative branches. Members of the IDWG are listed in Appendix I.

Goals of the Action Plan

The goals of the action plan are to develop a process for:

- (1) addressing issues identified during the September 1997 Decommissioning Workshop
- (2) collecting, disseminating, and sharing information with all interested parties
- (3) promoting dialogue and open communication among all parties
- (4) improving interagency planning and coordination in advance of future decommissioning projects

TABLE I. PRIORITY RANKING OF ISSUES

<u>Technical Issues</u>	<u>Agency Priority</u>	<u>Status</u>	<u>Responsible Party</u>	<u>Agency Leads</u>
(1) Deep Water Removal Tech.	Low	Ongoing	Industry	MMS/SLC
(2) Deep Water Disposal Tech.	Low	Ongoing	Industry	MMS/SLC
(3) Decommissioning Costs	Low	Ongoing	Industry	MMS/SLC
(4) Reuse Options	Low	Ongoing	Industry	MMS/SLC
(5) Safety Considerations	Low	Ongoing	Industry	MMS/SLC
<u>Environmental Issues</u>				
(1) Timely Removal	High	Ongoing	Industry, MMS, SLC, Local Gov. Agencies	S.B. & Vent. Co.
(2) NEPA/CEQA Process	High	Ongoing	MMS, SLC, ACOE, Local Gov. Agencies	MMS, SLC, ACOE, S.B. & Vent. Co.
(3) Air Emissions Requirements	Medium	Ongoing	Local Gov. Agencies	S.B. & Vent. Co.
(4) Steel Degradation	Low	Ongoing	Industry, MMS, SLC	MMS, SLC
(5) Landfill Constraints	Low	Ongoing	Industry, Local Gov.	Vent. & S.B. Co.
(6) Staging Areas	Low	Ongoing	Industry, Local Gov.	Vent. & S.B. Co.
(7) Scientific Research	Low	Ongoing	Industry, MMS, NMFS	MMS, NMFS
<u>Disposition Issues</u>				
(1) Scientific Research	High	Ongoing	Industry, MMS, NMFS, CDFG	MMS, NMFS, CDFG
(2) Lead Agencies	High	Ongoing	MMS, ACOE, CDFG, SLC, CCC	MMS, ACOE, CDFG, SLC, CCC
(3) Liability Responsibility	High	Ongoing	MMS, ACOE, CDFG, SLC, CCC	MMS/SLC
(4) Reefing Goals, Design/ Siting Criteria	High	Future	CDFG, ACOE, CCC	CDFG
(5) Essential Fish Habitat	High	Ongoing	NMFS	NMFS, CDFG
(6) Aquaculture Facilities	Medium	Ongoing	NMFS	NMFS, CDFG
(7) USCG Requirements	Low	Ongoing	USCG, MMS, SLC	MMS
(8) DOD Requirements	Low	Ongoing	DOD, MMS	MMS
(9) Deep Ocean Disposal	Low	Ongoing	EPA, MMS	MMS
(10) International Treaties	Low	Ongoing	U.S. State Dept., MMS	MMS
<u>Site Clearance Issues</u>				
(1) Shell Mounds	High	Ongoing	Industry, SLC, CDFG, CCC, MMS, NMFS	SLC, MMS
(2) Areal Extent	Medium	Future	SLC, MMS	MMS, SLC
<u>Policy Issues</u>				
(1) Rigs-to-Reef Legislation	Low	No action	Industry	---
(2) Premature Decommissioning	Low	No action	MMS, SLC	---
(3) Industry Decom. Program	Low	No action	Industry	---
(4) Economic Rent/Coastal Enhancement	Low	No action	Industry	---

TABLE I. PRIORITY RANKING OF ISSUES

<u>Technical Issues</u>	<u>Agency Priority</u>	<u>Status</u>	<u>Responsible Party</u>	<u>Agency Leads</u>
(1) Deep Water Removal Tech.	Low	Ongoing	Industry	MMS/SLC
(2) Deep Water Disposal Tech.	Low	Ongoing	Industry	MMS/SLC
(3) Decommissioning Costs	Low	Ongoing	Industry	MMS/SLC
(4) Reuse Options	Low	Ongoing	Industry	MMS/SLC
(5) Safety Considerations	Low	Ongoing	Industry	MMS/SLC
<u>Environmental Issues</u>				
(1) Timely Removal	High	Ongoing	Industry, MMS, SLC, Local Gov. Agencies	S.B. & Vent. Co.
(2) NEPA/CEQA Process	High	Ongoing	MMS, SLC, ACOE, Local Gov. Agencies	MMS, SLC, ACOE, S.B. & Vent. Co.
(3) Air Emissions Requirements	Medium	Ongoing	Local Gov. Agencies	S.B. & Vent. Co.
(4) Steel Degradation	Low	Ongoing	Industry, MMS, SLC	MMS, SLC
(5) Landfill Constraints	Low	Ongoing	Industry, Local Gov.	Vent. & S.B. Co.
(6) Staging Areas	Low	Ongoing	Industry, Local Gov.	Vent. & S.B. Co.
(7) Scientific Research	Low	Ongoing	Industry, MMS, NMFS	MMS, NMFS
<u>Disposition Issues</u>				
(1) Scientific Research	High	Ongoing	Industry, MMS, NMFS, CDFG	MMS, NMFS, CDFG
(2) Lead Agencies	High	Ongoing	MMS, ACOE, CDFG, SLC, CCC	MMS, ACOE, CDFG, SLC, CCC
(3) Liability Responsibility	High	Ongoing	MMS, ACOE, CDFG, SLC, CCC	MMS/SLC
(4) Reefing Goals, Design/ Siting Criteria	High	Future	CDFG, ACOE, CCC	CDFG
(5) Essential Fish Habitat	High	Ongoing	NMFS	NMFS, CDFG
(6) Aquaculture Facilities	Medium	Ongoing	NMFS	NMFS, CDFG
(7) USCG Requirements	Low	Ongoing	USCG, MMS, SLC	MMS
(8) DOD Requirements	Low	Ongoing	DOD, MMS	MMS
(9) Deep Ocean Disposal	Low	Ongoing	EPA, MMS	MMS
(10) International Treaties	Low	Ongoing	U.S. State Dept., MMS	MMS
<u>Site Clearance Issues</u>				
(1) Shell Mounds	High	Ongoing	Industry, SLC, CDFG, CCC, MMS, NMFS	SLC, MMS
(2) Areal Extent	Medium	Future	SLC, MMS	MMS, SLC
<u>Policy Issues</u>				
(1) Rigs-to-Reef Legislation	Low	No action	Industry	---
(2) Premature Decommissioning	Low	No action	MMS, SLC	---
(3) Industry Decom. Program	Low	No action	Industry	---
(4) Economic Rent/Coastal Enhancement	Low	No action	Industry	---

APPENDIX I.

INTERAGENCY DECOMMISSIONING WORKING GROUP

<p>Mary Bergen Staff Marine Biologist California State Lands Commission 6842 Shannon Drive Huntington Beach, CA 92677 (714) 894-2964</p>	<p>Luis Perez County of Santa Barbara Planning & Development Dept., Energy Div. 1226 Anacapa St. Santa Barbara, CA 93101-2010 (805) 568-2034</p>
<p>Alison Dettmer Energy and Ocean Resources Unit California Coastal Commission 45 Fremont Street, Suite 2000 San Francisco, CA 94105 (415) 904-5246</p>	<p>Glenn Shackell Minerals Management Service Pacific OCS Region 770 Paseo Camarillo Camarillo, CA 93010 (805) 389-7584</p>
<p>Mark Helvey National Marine Fisheries Service 777 Sonoma Avenue, Room 325 Santa Rosa, CA 95404 (707) 575-6078</p>	<p>Jim Slawson Chief, Habitat Conservation National Marine Fisheries Service 501 W. Ocean Blvd., Suite 4200 Long Beach, CA 90802-4213 (562) 980-4044</p>
<p>Herb Leedy Minerals Management Service Pacific OCS Region 770 Paseo Camarillo Camarillo, CA 93010 (805) 389-7818</p>	<p>John Smith Minerals Management Service Pacific OCS Region 770 Paseo Camarillo Camarillo, CA 93010 (805) 389-7833</p>
<p>Dave Parker California Dept. of Fish and Game Marine Resources Div., Southern Oper. 330 Golden Shore, Suite 50 Long Beach, CA 90802 (562) 590-5129</p>	<p>Marina Voskanian Chief, Planning and Development California State Lands Commission 200 Oceangate, 12th Floor, (Arco Tower) Long Beach, CA 90802-4331 (562) 590-5291</p>

facilitate communication and dialogue among all interested parties. An example of such a forum was the "Platform Ecology and Ocean Circulation Session" that was held during the Fifth California Islands Symposium at the Natural History Museum in Santa Barbara on March 29 - April 1, 1999. It is anticipated that one or two issue-focused forums will be scheduled annually beginning in 1999 and continuing through the year 2002. The IDWG will periodically evaluate the effectiveness of the forums and consider the need to extend them beyond the year 2002. The forums may be scheduled as separate events or they may be held in conjunction with upcoming conferences and symposiums.

The task of planning and organizing the forums will be coordinated by the IDWG. The IDWG will invite representatives from the general public, industry, environmental interest groups, academia, and other interested parties to participate in the process. The process will build upon the successful public outreach and participation process that was followed in planning and organizing the September 1997 Decommissioning Workshop which was jointly sponsored by the MMS and SLC.

General Time-line

This section outlines a very generalized time-line for implementing the action plan. The time-line covers the period from 1999 through the year 2002.

Phase I. Plan Development and Implementation

Third Quarter 1999	-----	Finalize Action Plan
Third Quarter 1999	-----	Schedule Public Meeting to Present/Discuss Plan
Years 1999-2002+	-----	Collect, Disseminate and Share Information with all Interested Parties (workshops, seminars, etc.)

Region?

- How will costs of transporting platforms limit their use as an artificial reefs?

(4) Reuse Options

- What are the prospects for converting offshore platforms to other uses (academic research/military facility) in the Pacific Region?
- What will it cost to maintain a platform that is converted to an alternate use?
- Who will be responsible for maintenance?
- How will the issue of liability be addressed?
- What are the prospects for reusing all or part of Pacific Region offshore oil and gas facilities in other oil and gas industry applications in the Pacific Region, the U.S., and internationally?

(5) Safety Considerations

- What are the primary human risk/safety considerations associated with decommissioning operations?
- Have these risks been quantified?
- To what degree would partial removal of a platform, reduce these risks?

Environmental Issues

(1) Timely Removal of Facilities

- What measures can be taken to ensure onshore processing facilities linked to decommissioned offshore facilities are removed in a timely manner?
- What policies and requirements have local governments adopted for decommissioning onshore facilities?
- How are these policies and requirements likely to affect future land use decisions for consolidated facilities?
- What decommissioning issues will be addressed in the Local Coastal Program (LCP) which the County of Santa Barbara is now updating?
- What decommissioning issues will be addressed by the City of Carpinteria in amending its General Plan and LCP amendment?

(2) NEPA/CEQA Process

- Should Joint Review Panels (JRP's) be formed to oversee preparation of EIS/EIR's for decommissioning offshore oil and gas structures and associated onshore processing facilities?
- How would JRP's be funded?
- Should agencies jointly prepare a programmatic EIS/EIR for decommissioning offshore

<p>Gregg Pelka California State Lands Commission 200 Oceangate, 12th Floor, (Arco Tower) Long Beach, CA 90802-4471 (562) 590-5201</p>	<p>Julie Ward County of Ventura Resources Management Agency/Planning 800 S. Victoria Avenue L-1740 Ventura, CA 93009 (805) 654-3588</p>
--	--

APPENDIX II.

LISTING OF ISSUES IDENTIFIED AND QUESTIONS RAISED BY PARTICIPANTS AT THE SEPTEMBER 1997 DECOMMISSIONING WORKSHOP AND THE NOVEMBER 19, 1997 INTERAGENCY MEETING

Technical Issues

(1) Deepwater Removal Technology

- What type of technology is likely to be used to decommission deepwater oil and gas structures located offshore California?
- Is it technically and economically feasible to completely remove large deepwater (+400 foot water depth) oil and gas structures?
- Are new technologies such as the Versatruss System and external buoyancy/flotation systems likely to be developed to the point where they can be used for removing platforms in the Pacific Region early in the next century?
- What ports and scrap yards have the capacity to handle the large volume and weight of steel contained in large deepwater platforms?

(2) Deepwater Disposal Technology

- Is it technically, economically, and politically feasible to dismantle oil and gas platforms offshore California, transport them to Mexico, and build artificial reefs?
- Is it technically and economically feasible to place decommissioned oil and gas structures in existing deepwater disposal sites located offshore California?

(3) Decommissioning Costs

- For various removal (partial versus complete) and disposal options (reefing, scrapping, deepwater disposal), how much will it cost (general order of magnitude) to decommission shallow, moderate, and ultra-deepwater platform structures in the Pacific

oil and facilities in the Pacific Region?

- Environmental documents for future development should do a better job of evaluating environmental impacts of decommissioning and assessing the life of the project.
- Environmental documents for decommissioning projects should address the full range of disposition alternatives.
- Agencies should monitor and review marine mammal, commercial fishing and other mitigation measures to ensure that they are effective.
- Mitigation measures that have proven effective for past projects should be required for future projects and continuously improved.

(3) Air Emission Requirements

- How does the attainment status for both Federal and State air quality standards affect future Air Pollution Control District (APCD) requirements for decommissioning operations?
- What are the current APCD requirements for air emissions resulting from decommissioning operations?
- Are any changes in the APCD requirements proposed that may affect future decommissioning operations?
- What are the emission sources from decommissioning operations and how can the impacts be mitigated?
- What are the Best Available Control Technology (BACT) requirements for decommissioning projects under New Source Review regulations?
- Do APCD requirements prohibit or severely restrict emission levels during the peak ozone periods? Would additional requirements be placed on decommissioning projects during the ozone season?
- Will decommissioning operations be subject to Part 70 (Federal) permits? If so, will these projects be subject to additional requirements and would the Part 70 permit be developed simultaneously with District permits?
- Does disposal of decommissioning materials pose any air quality concerns or require additional permits?
- How will the enactment of Assembly Bill 3047, which prohibits APCD's from requiring companies to reduce (offset) emissions by permanently reducing emissions elsewhere, affect requirements the APCD places on future decommissioning operations?
- How can air emissions resulting from decommissioning operations be mitigated?
- Will the California Portable Equipment registration program affect future decommissioning operations?

(4) Steel Degradation

- How long will it take for the steel to degrade in the marine environment?
- Will the corrosion of steel release deleterious materials such as heavy metals into the

oil and facilities in the Pacific Region?

- Environmental documents for future development should do a better job of evaluating environmental impacts of decommissioning and assessing the life of the project.
- Environmental documents for decommissioning projects should address the full range of disposition alternatives.
- Agencies should monitor and review marine mammal, commercial fishing and other mitigation measures to ensure that they are effective.
- Mitigation measures that have proven effective for past projects should be required for future projects and continuously improved.

(3) Air Emission Requirements

- How does the attainment status for both Federal and State air quality standards affect future Air Pollution Control District (APCD) requirements for decommissioning operations?
- What are the current APCD requirements for air emissions resulting from decommissioning operations?
- Are any changes in the APCD requirements proposed that may affect future decommissioning operations?
- What are the emission sources from decommissioning operations and how can the impacts be mitigated?
- What are the Best Available Control Technology (BACT) requirements for decommissioning projects under New Source Review regulations?
- Do APCD requirements prohibit or severely restrict emission levels during the peak ozone periods? Would additional requirements be placed on decommissioning projects during the ozone season?
- Will decommissioning operations be subject to Part 70 (Federal) permits? If so, will these projects be subject to additional requirements and would the Part 70 permit be developed simultaneously with District permits?
- Does disposal of decommissioning materials pose any air quality concerns or require additional permits?
- How will the enactment of Assembly Bill 3047, which prohibits APCD's from requiring companies to reduce (offset) emissions by permanently reducing emissions elsewhere, affect requirements the APCD places on future decommissioning operations?
- How can air emissions resulting from decommissioning operations be mitigated?
- Will the California Portable Equipment registration program affect future decommissioning operations?

(4) Steel Degradation

- How long will it take for the steel to degrade in the marine environment?
- Will the corrosion of steel release deleterious materials such as heavy metals into the

performance of organisms on platforms and natural reefs?

- Has sufficient information been compiled to determine whether artificial reefs are fish attractors or producers?

(2) Lead Agencies

- What Federal and State agencies have regulatory authority over structures decommissioned at sea?
- What agencies will serve as the lead agencies for preparing environmental documents pursuant to NEPA and CEQA?
- What is the current status of artificial reefs legislation in the California State Legislature?

(3) Liability Responsibility

- Who has liability (for accidents, collisions, and other hazards) for structures decommissioned in State waters, the Federal OCS, and at deep seabed disposal sites?
- What Federal and California statutes, policies, and regulations are in force that address liability issues associated with decommissioning offshore oil and gas facilities? How is liability defined?
- How has the liability issue associated with building artificial reefs been addressed by California and other States?
- Should an industry financed fund be established to cover the costs of a liability program?

(4) Reefing Goals, Siting, and Design Criteria

- What are the goals of the California artificial reef program and how would the decommissioning of structures at sea contribute to achieving these goals?
- Would the decommissioning of facilities at sea serve to enhance fishing reefs, harvest refuge, and/or maraculture/aquiculture facilities?
- Would the removal of the upper 100-200 feet of a jacket structure, result in the remaining structure having little or no value as an artificial reef?
- Are deepwater platforms proposed for partial removal located too far from shore to be accessible to commercial/recreational fishing vessels?
- What guidelines has the CDFG issued for converting offshore oil and gas platforms to artificial reefs?
- What sites have been approved for artificial reefs offshore California that could accept oil and gas structures?
- Have other sites been identified as suitable for artificial reefs?
- Should a working group be formed to develop designs and select sites for rigs to reef?

- Should a preclusion mapping process similar to that followed in Louisiana be undertaken involving all interested stakeholders?
- How much will it cost to maintain an artificial reef (converted platform)?
- Will CDFG require buoys to be installed on oil and gas structures that are partially removed and converted to an artificial reef?
- Are there sources of rock and other material available to augment the structure?

(5) Essential Fish Habitat

- Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, the National Marine Fisheries Service (NMFS) is in the process of issuing regulations that will establish guidelines for the description and identification of Essential Fish Habitat (EFH) in Fisheries Management Plans and actions to conserve and enhance EFH. NMFS has stated that artificial reefs could be identified as EFH.
- Will requirements for removal of offshore structures be waived if they are designated EFH?

(6) Aquaculture Prospects

- NMFS is examining opportunities for developing aquaculture projects to promote propagation and rearing of aquatic organisms.
- Offshore oil and gas platforms may have potential aquaculture applications.
- What is NMFS's view regarding the aquaculture potential of offshore oil and gas structures?

(7) U.S. Coast Guard (USCG) Requirements

- At what depth below the water surface will the USCG require platforms to be removed to safeguard ocean shipping?
- Will platforms located near shipping lanes be required to be removed to greater depths than other platforms?
- Will the USCG require partially removed structures to be buoyed?
- Will partially removed structures be identified on coast and geodetic charts?

(8) Department of Defense (DOD) Requirements

- Will the partial removal of a platform interfere with submarine passage lanes or conflict with any other national security interests?
- Will the partial removal of a platform be opposed by DOD if it located in a military warning area or in or near a missile testing range?

(9) Deep Ocean Disposal

- Can offshore oil and gas structures be disposed of by placing them in existing deepwater disposal sites offshore California?
- Where are approved deepwater disposal sites located offshore California?
- What agencies issue permits for deepwater disposal?
- Are there specific regulatory requirements for deepwater disposal?

(10) International Treaties, Conventions, and Guidelines

- What are the various international requirements and guidelines governing platform disposal at sea?
- Do they have any applicability in the U.S.?
- Are they likely to have any applicability in the future?
What is the status of the U.S. interagency work group that is developing a waste assessment framework for platform disposal at sea?

Site Clearance Issues

(1) Shell Mounds

- Do shell mounds constitute an important biological habitat that should be protected?
- What type of studies are needed to determine whether shell mounds constitute an important biological habitat? Have such studies been completed or initiated?
- What is the chemical composition of the shell mounds? Are there toxic materials present that should not be disturbed?
- Do the shell mounds constitute a hazard to trawling more significant than other sea floor obstructions? Do the navigation and positioning systems now employed by commercial trawlers provide sufficient accuracy to avoid obstacles such as shell mounds? How large an area would be precluded from trawling given the accuracy of these systems and appropriate safety margins?
- If shell mounds are not removed, should commercial fishermen be compensated for the loss of trawling grounds? What types of compensation measures should be considered?
- Should the location of shell mounds be plotted on navigation charts or marked by buoys to alert commercial fishermen to their presence?
- What type of techniques could be employed to remove the shell mounds? Would their removal require the use of explosives?
- How much would it cost to remove the shell mounds? How do these costs compare to those that would be incurred if commercial trawlers were to be compensated for their inability to trawl in the area?

(2) Areal Extent

- For offshore oil and gas facilities that are completely removed, how large an area surrounding the site should be cleared of oil and gas related obstructions?
- For facilities partially removed or toppled in place, what types of site clearance procedures should be required?

Policy Issues

(1) Rigs-to-Reef Legislation

- Does California need rigs-to-reef legislation?
- Should the legislation be modeled after the Louisiana and Texas rigs-to-reef legislation?
- Who should sponsor the legislation?

(2) Premature Decommissioning

- Are oil and gas facilities being prematurely decommissioned and will hydrocarbon resources be permanently lost that otherwise would have been recovered?
- Do MMS and SLC have regulations/lease requirements that prohibit premature

decommissioning?

- What actions are being taken by industry and regulatory agencies to extend operations and enhance ultimate recovery?
- Are there other actions that can be taken?
- Can facilities be mothballed for future use?

(3) Industry Decommissioning Program

- Should agencies encourage industry to develop a cooperative program for decommissioning facilities similar to the Subsea Well Abandonment Program (SWARS) to reduce the environmental impacts and the costs of decommissioning? (SWARS was a cooperative program that involved the plugging and abandonment of 23 wells in State waters by six companies using one jack-up rig.)

(4) Economic Rent/Coastal Enhancement

- The economic rent (cost savings) resulting from decommissioning platforms and converting them to artificial reefs can be very substantial, particularly for deepwater structures. In Texas and Louisiana, industry distributes a portion of the savings to the states to manage artificial reef programs consistent with the artificial reef legislation

that has been enacted in those states. The economic rent associated with converting platforms to artificial reefs offshore California could be used to supplement the California Coastal Resources Grant Program and support the CDFG artificial reef program or other coastal needs.