

# EPOKE



*Information on the Ekofisk I cessation project*

*No. 1 - December 1997*



Photo: Hamre/As

## Planned stop at Cod in March 1998

At the end of February/ beginning of March 1998 production on Cod will cease as the second of the outlying greater Ekofisk area platforms draws down the blinds for good. Albuskjell 1/6 F was the other, closing down several years ago, in 1990. Cod is now producing from three of nine wells drilled from the installation. It was the first field on Norway's continental shelf to prove potentially commercial petroleum in 1968, a finding that was later reversed when appraisal wells showed it to be uncommercial unless supported by other discoveries. In fact production only started late in 1977. - Our plans for closing down got started in 1996 and a whole series of

new procedures had to be worked up, recalls Knut Skarestad who headed the process. These procedures and safety criteria will also be followed for decommissioning of the other platforms that will come after Cod in 1998. On

7 November this year the Cod plans were submitted to the Norwegian Petroleum Directorate in the form of a consent application.

After Cod, platforms Edda, Albuskjell 1/6-A and West Ekofisk (2/4 Delta) are due for closure in August 1998 in connection with the transition to Ekofisk II when processing moves to next-generation Ekofisk 2/4 J. The pipelines between the platforms and

the Complex and thus the export lines will be finally broken.

After shutdown the platforms will be prepared for their "cold phase", when the wells are plugged and secured using a modular derrick rig (P/A rig). Also process systems will be cleaned up. All auxiliary systems will be gradually demobilized. On board the derelict installations solar panels will provide the electricity for navigation lights and fog sirens. In all other respects the once busy offshore factories will be lifeless — closed and locked.

Occasionally — at regular intervals — teams of inspectors will mount excursions to the empty monoliths to do essential maintenance.

The cold phase is a sort of waiting position whilst the final disposal is decided. Maybe somebody will want to use the platforms for another purpose where they stand, something to do with petroleum, or not, as the case may be, or remove them, or just abandon them where they stand. These four cases must be examined by law, and when we have made our recommendations in a cessation plan the Storting will reach the final decision on their fate.

Cod will be the first installation to go into the cold phase, though actually compressor platforms 36/22 and 37/4-A on the Teesside line in the UK sector have been closed down for many years. Phillips' experience with inspection and maintenance of these ocean outposts will be taken into consideration in the Cod decommissioning procedures and other Ekofisk area platforms that follow in Cod's wake during 1998.

## New newsletter

In the third quarter 1999 Phillips intends, on behalf of Phillips Norway Group, to submit a plan for cessation of the Ekofisk I platforms to the Norwegian authorities. The plan will recommend a solution explaining how 14 of the first generation installations

can be disposed of after shutdown. The final choice of disposal options will be taken by the Storting. The Norwegian government will carry some two-thirds of the cost of decommissioning, whilst the companies must find the other one-third.

There is great interest in the decommissioning work on Ekofisk, both inside our company and within

the other coventurers, as also in society at large. Epoke — the newsletter you are now reading — will carry information on the project as it goes along. It will be published at least once a quarter. If you would like to receive a copy, please just complete the form on the back page. Phillips employees will receive their copy of Epoke automatically.





*The Ekofisk Complex - view from north.*

# Ekofisk Complex North - first to go

The subsidence of the seabed beneath the Ekofisk Complex means that five north-end platforms need special consideration in connection with final cessation plans for Ekofisk I. They are Ekofisk 2/4 P, 2/4 T, 2/4 R, 2/4 G and 2/4 S. The topsides here are more vulnerable to a 100-year wave than the other structures.

Phillips will therefore suggest removing the topsides on P, T and R in the new century, as well as flarestack north and gangways north of Ekofisk 2/4 C. The final date has not been decided but the company and coventurers expect to submit a cessation plan with impact analysis to the Ministry of Petroleum and Energy on 31 March 1998, promises project responsible Per Brun Ellingsen. The Statpipe Group and Amoco Group are also working on what to do with their installations, Ekofisk 2/4 S and 2/4 G respectively.

Once Ekofisk II comes on stream in August 1998 the five platforms in Ekofisk's north end will be shut down. This fact, combined with the subsidence, puts them in a special category. The platforms to the south of the Complex will have a job to do

in the Ekofisk II context, at least for a few years.

## RISK MANAGEMENT

Structural studies performed by Phillips regarding the date of removal of the platform topsides and gangways initially showed 2001 (2002 for 2/4 T) to be the cut-off date. But more detailed studies show that we could wait a little longer, the exact time varying from platform to platform.

With the increasing subsidence the probability that a 100-year wave will damage the structures also increases, which could make removal difficult and costly. The probability of serious damage, gets greater as time goes on. The risk is a function of the estimated costs connected with serious structural damage — together with the

probability that the damage actually arises. Structural damage does not represent a risk to the environment or loss of life because the platforms will be "cold" in 1998 and the evaluation takes account of specific weather conditions. The risk of the annual maintenance costs is the "cost" side of the equation. The "benefit" side is that values for removal decrease over time. These quantitative cost-benefit calculations, coupled with qualitative evaluations, will lead us to the recommended removal year. The platform jackets are under no threat from the waves once the topsides and gangways are removed.

## DESIGN COMPETITION

Prequalification of contractors who will tender for the removal operation has now been concluded. Only approval from the coventurers remains.

The timetable indicates that qualified parties will be invited to submit proposals for how to accomplish removal during January 1998. The proposals will be looked on as contributions in a design competition, says Per Brun Ellingsen. — How the contractors will solve the task, and what they will do with the topsides when they arrive onshore, is what we need to know. We need to know how onshore work will proceed, and what the outcome will be.

The proposals will then be evaluated by Phillips before the process is taken a step further.



# Study program submitted to Ministry

As a step in the work to examine the consequences of the cessation of the 14 installations on Ekofisk (called for convenience Ekofisk I) a proposal for a study program was sent to the Ministry of Petroleum and Energy in the middle of November. The proposal is then sent out for consultative hearings by the Ministry. After that the impact analysis can be developed.

- The purpose of the impact analysis process is to identify the factors that decision-makers need to have in mind and focus on when planning the cessation process. The analysis is also a tool that can help the operator move towards a final preference in its internal work, says Kari Amundsen, who heads the team working on the project in Phillips.

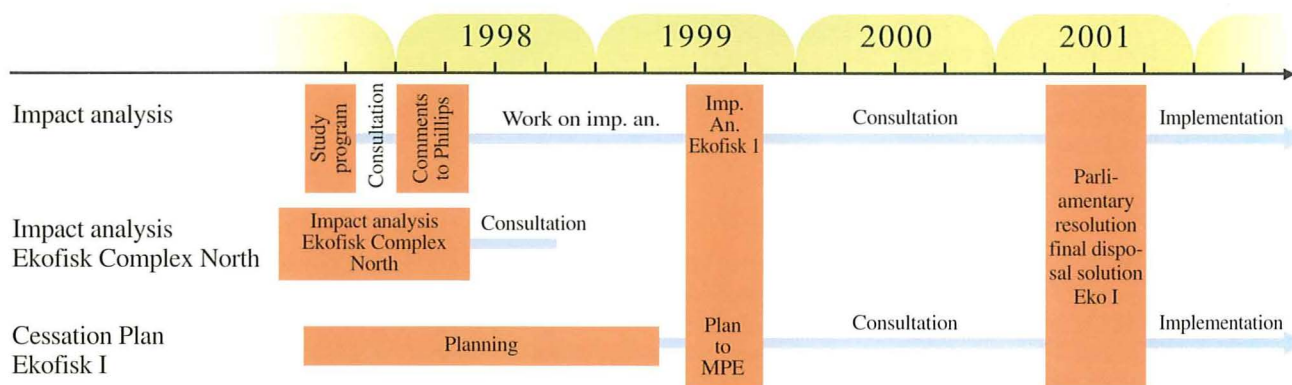
- In this study program proposal the plans are presented for establishing specific shutdown and disposal

solutions for the 14 Ekofisk I platforms. The time factor is very important for some platforms in the northern end of the Complex, as the seabed is still subsiding. Therefore we are planning, for safety reasons, to remove the topsides of these installations (2/4 P, 2/4 T, 2/4 R) and dispose of them independently of the other platforms. Therefore two impact analyses are in the pipeline, one for removal of the Ekofisk North End topsides, which we plan to send to the Ministry in the first quarter 1998, and

one for the remaining Ekofisk I platforms which should reach the Ministry in the third quarter 1999.

The proposed study program also contains a survey of environmental and social problems that the impact analysis will illuminate. The study program also presents a list of the many studies that have been instigated to explore our options, and shed light on the consequences of various solutions.

Since it made sense to coordinate the study program for the North End platforms it was submitted to the Ministry by Phillips on behalf of the Phillips Norway Group, the Amoco Group (owners of Ekofisk 2/4 G), and the Statpipe Group (owners of Ekofisk 2/4 S). The Ministry expects the consultative round to last for about three months before the program, duly amended and corrected, returns to Phillips. Decommissioning of Ekofisk 2/4 S and Ekofisk 2/4 G is up to the respective owners in the Statpipe Group and Amoco Group.



## Many parties involved in cessation planning

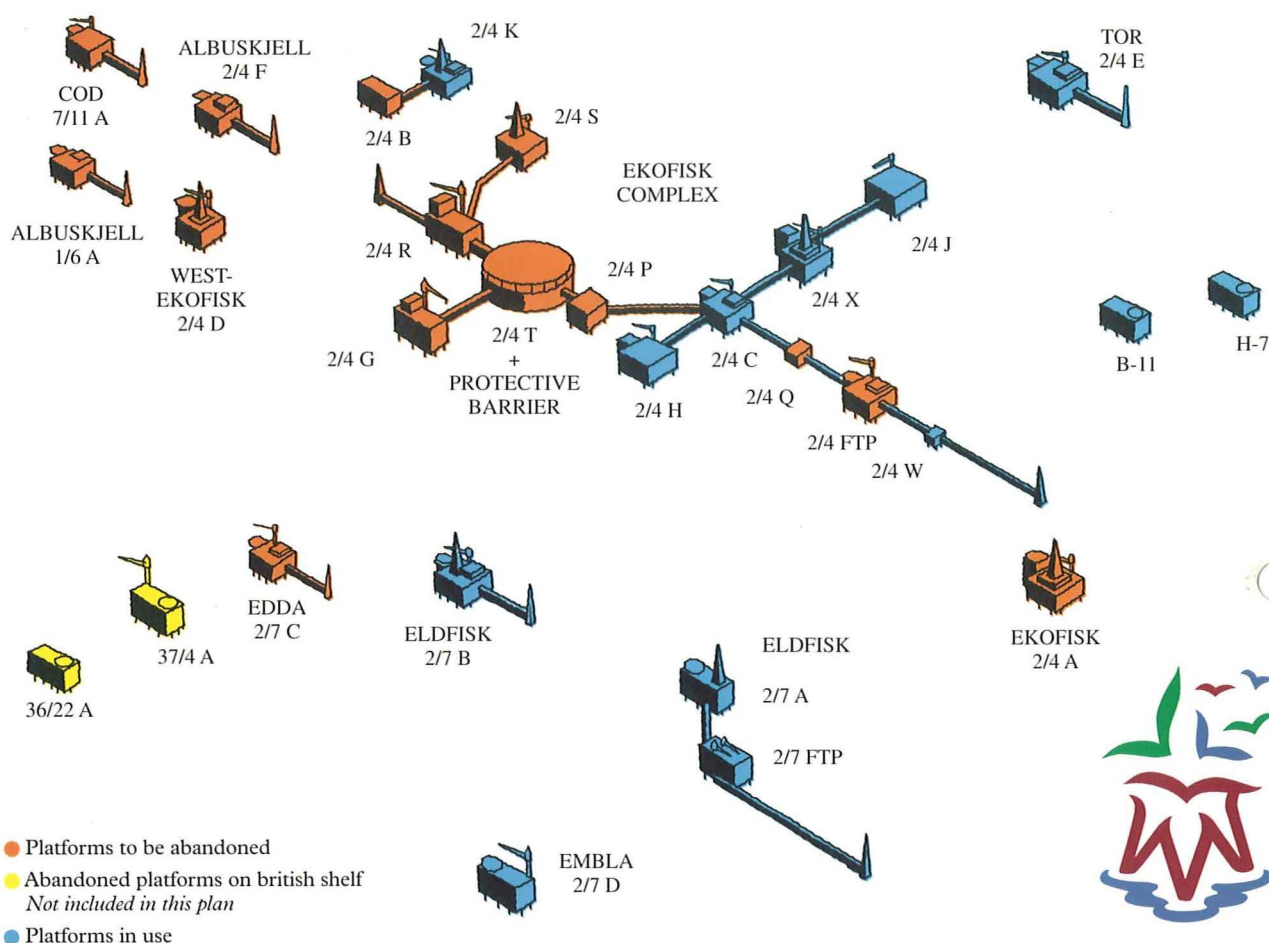
The work on phase out and cessation planning for the Ekofisk I platforms is the largest cessation project in Europe. Roughly 40 members of staff at Phillips are involved in the project, part-time or full-time.

It is organized to fit Phillips' new Business Process Remodelling (BPR) format. Kjell O. Jørgensen is the person responsible for the business case with two activity teams looking after implementation in their respective areas. One team, headed by Ivar Blaauw, is responsible for planning and plugging wells on the redundant platforms. The other, headed by Kari Amundsen, is working on the technical aspects of planning the closure.



The team working on phase out and cessation planning for Ekofisk I. Front row from left: Bjørn Rølland (technology development), Knut Skarestad (outlying platforms), and Britt Tøsse Brun (environment). Middle row from left: Stig S Kvendseth (public affairs), Kari Amundsen (activity team leader), Mia Nesse (safety), and Per Brun Ellingsen (Ekofisk Complex North). Back, from left: Hans Atle Christensen (Ekofisk Complex South), Sveinung Øvretveit (cessation plan), and Svein Ove Skogmo (planning). Kristin Hovda Anfindsen (economy) and Jan Bjørholm (investment recovery) were not available for the photograph.





The Greater Ekofisk Area consists of 27 platforms, large and small. When Ekofisk II — the new generation Ekofisk field project — comes on stream in August 1998, a total of 14 platforms will be shut down (red). These are the platforms that are now designated Ekofisk I, and which the licensees must submit a cessation plan for in the third quarter of 1999. There are also two compressor platforms, 36/22 and 37/4A, on the oil line to Teesside which have already been shut down. They are on the UK continental shelf (yellow) and are not a part of the Ekofisk I cessation plan.

Further operation in the Ekofisk area will take place on the 12 remaining platforms (blue) which produce from Ekofisk, Tor, Eldfisk and Embla. The Ekofisk Complex installations also provide for process services and transportation of oil and gas by pipeline to Teesside and Emden.

The license period for the Ekofisk area runs until 2028.

Please send me the newsletter EPOKE

☐ English ☐ Norwegian

Name .....

Company .....

Adress .....

Return by mail, or fax to (+47) 51 69 19 55

Kan  
sendes  
ufrankert  
i Norge

S VARSENDING  
Avtale nr 413 112/2 Pb.

## EPOKE

Phillips Petroleum  
Company Norway  
4056 Tananger