

EKOFISK INDUSTRIAL HERITAGE – HOW TO DOCUMENT AND COMMUNICATE A LARGE TECHNICAL- INDUSTRIAL MONUMENT AT SEA

Kristin Øye Gjerde, researcher, Norwegian Petroleum Museum

Why document Ekofisk?

Ekofisk was the first field producing oil and gas on the Norwegian continental shelf. The field was found in 1969 and started production in 1971. Ekofisk occupies a central place in Norway's petroleum history for several reasons. Besides being a pioneer it is a giant field with an interesting development history. During the last 30 years oil, liquid gas and gas have been sold with a total value of more than 190 billion dollars from Ekofisk. That is 20 percent of Norway's production of oil and gas in this period. The influence on the Norwegian society has been significant and defines Ekofisk as a part of Norway's industrial heritage with national value. The Norwegian Directorate for Cultural Heritage has characterised the installations in the Ekofisk area as "some of the largest and most complex cultural monuments of our time". It emphasises their significance as an important symbol of modern Norway's emergence. In line with the provisions of the Norwegian Cultural Heritage Act, and since it is not possible to preserve the installations at sea, the directorate called for the creation of a documentation project to cover Ekofisk.

The documentation project "Cultural Heritage Ekofisk", carried out from 2002 to 2004, represents a new way to preserve a large technical-industrial monument. It is the first time in Norway documentation of a cultural heritage has been done in this scale. The challenge in this project has been to document eight oil- and gas fields, 31 platforms and 36 years of history from 1962 until 1998.

The source material has been large: 25.000 photos, 700 films, 300 publications, 10.000 shelf meters archives and 250.000 drawings. There have also been done 70 interviews. There have been developed methods to make a selection in the source material. For example have the number of photos registered in the project been reduced from 25.000 to 4000. 10.000 shelf meters archives have been reduced to 250 shelf meters. Out of 31 platforms only 15 are going to be abandoned and 6 of them are documented in detail.

The project has done a significant development work, regarding to method and also regarding to storing and “finding” of data and the way of presentation. All the source material apart from the paper archive is digitized. The source material is stored in seven databases. It is developed a search module making it possible to delve in all the databases at the same time. The digital archive is available through the Cultural Heritage Ekofisk website www.kulturminne-ekofisk.no. The website, which is edited by the Norwegian Petroleum Museum, is the tool to communicate the remembrance of Ekofisk as a large technical-industrial monument at sea, long after the platforms have been removed and only the sea surface is left.

Where is Ekofisk situated?

On the front page of The Cultural Heritage Ekofisk website there is a map that shows that Ekofisk is situated on the border between the Norwegian, British and Danish continental shelf. The next map shows several orange spots which indicate the oil and gas fields in the Ekofisk area.

What to document?

Documenting such a large technical-industrial monument is a complex business, not least because so many aspects of the installations and operations need to be covered. The project has covered the first phase of oil and gas development in the Ekofisk area of the Norwegian North Sea. The project has involved a systematic selection of documentary source material relating to the first development stage from 1962-1998.

14 of 30 platforms are due to be disassembled and removed up to 2013. Structures supported by the concrete Ekofisk tank will also be removed. Since there are so many platforms it has been necessary to make a selection in the documentation project. Only one or two of the platforms with similar functions in the production process has been selected for documentation:

- 1 production platform
- 1 pump platform
- 2 combined production- and living quarters

1 concrete platform

1 hotel platform

On the web site there is a drawing where you can click into each platform. The selected ones are the production platform Ekofisk 2/4 B, the pump platform Norpipe 37/4 A, the combined production and living quarters Albuskjell 1/6 A and Edda 2/7 C, the concrete Ekofisk tank 2/4 T and the hotel platform Ekofisk 2/4 H.

The drawing also functions as a timeline. It starts in 1971 when there was only one platform in production, Gultide, and two oil tankers. In 1973 two platforms were in production and several others which are marked with orange were installed but not yet in production. In 1976 you can see that the oil pipeline to Teesside in Britain was in function and the gas pipeline to Emden in Germany had been installed but was not yet in use. In 1981 the Ekofisk area was nearly at its peak. All the platforms and pipelines were in function. Then in 1998, which is the year that is the end of the documentation project several of the installations marked with grey, had been shut down because they were not longer profitable. They are going to be removed before 2013.

It is important to notice that the Ekofisk field still is running and will produce oil and gas for the next forty years. It is only the first phase of the fields' history that is documented. Now new technology is taking over.

How has the project been organized?

The Ekofisk Industrial Heritage project has been run from 2002-2004 by the Norwegian Petroleum Museum for ConocoPhillips Norway and the Ekofisk I licensees. In January 2005 Norway's first digital cultural heritage web site was opened.

The documentation has been extensive and complicated, spread between a number of owners and storage media, and new material like photos and interviews has had to be collected in addition to systematising and arranging existing documents.

Work on collecting, selecting, registering and storing source material has been done in close collaboration with the National Library of Norway and the National Archive Services of Norway. This has accordingly been a true "ALM" project, involving cooperation between

archives, libraries and museums. Each institution has done the parts of the work where they have expertise.

The Petroleum Museum has been editor for the web site and an edited presentation of the field's development, working conditions and significance for people and society is provided. The museum has utilised original sources and made an extensive selection of these materials in order to present a comprehensive documentation of Ekofisk.

Together with the National library the museum has established an archival solution for preserving sources, with the emphasis on photographs, films, publications, artefacts, drawings, interviews and other material. Except for the artefacts, digital databases represent the principal medium for storing these sources. So the outcome of the project can be called a digital national memory – made accessible through the web.

Responsibility for the archive sub-project has rested with the *National Archive Services*. This work has involved securing an overview of the archives to be included in the project as well as selecting, organising, cataloguing and depositing them. The whole archive occupies about 200 metres of shelving, which will be preserved for future generations. More than a 1000 maps and drawings are also due to be deposited. The paper archive is not digitized. Only a catalogue is available at the web.

The National Library has been pioneers in developing a common interface for searching different databases at various institutions. The library has delivered a basic technical solution which meets the desire for an overall search in seven databases at the same time. This can also provide a model for future ALM cooperation.

NetPower has been responsible for developing publication tools for the web site and has illustrated and implemented various displays on the site.

The operator ConocoPhillips and the licensees for the Ekofisk area have documented the history of the various fields since the start. The Ekofisk Industrial Heritage project has accordingly been able to draw on a huge body of material.

The Ekofisk Industrial Heritage website

The Ekofisk Industrial Heritage web site provides an insight into the development of the

Ekofisk area in the Norwegian North Sea from 1962–1998. One of the purposes with the website is to present the documentation project for the general public in a hopefully interesting way. Very few people have the possibility to visit an offshore platform – the website might be the best alternative.

I will now present the main themes on the website. They are: at first

- The fields in the Ekofisk area and their development year by year. The reservoir is not part of the project because Ekofisk still is running, and it is a business secret.
- The platforms – how they are built and how they function? The six selected ones have been given a broader presentation than the others. I have chosen the production platform Ekofisk 2/4 B. There is a main article about each platform and connection to technical descriptions. You can choose between several media. If you click on photos, a search of all the photos from the platform appears. Click on one of them and it will appear in a bigger size, like this one from the blow out at Bravo in 1977. If you click on drawings you can choose a deck like the red one. There you can choose one of the red cameras and get a view of the place or click on a 360 degree camera that gives a very good impression, and you can “move” in all directions.
- The next main theme is how the installations have been used? How people lived and worked at Ekofisk – with the presentation of more than 50 offshore occupations, working culture and the history of the unions. Under working culture there is a link to the only new research project carried out for the documentation project. It is carried out by a social anthropologist and has the title: Pioneers in the North Sea. Norwegians and Americans working together in the Ekofisk area, during 1967 to 1977. There has also been written a post-graduate thesis in social anthropology about “Women working at Ekofisk”. These essays are mainly based on interviews.

If you click on occupations you can choose a main category f. ex divers. They are my favourites at the moment because the North Sea Divers History is my next research project. There is an article about each occupation and there is further access to interviews, articles, films etc. F. ex. Safe diving from 1975. About 25 new interviews have been carried out in the project covering the main working categories, one general manager and one union leader.

- The next main theme is the Timeline with more than one hundred articles telling the stories about important events, dramatic accidents, technical challenges etc. Six important incidents

have been given a broader presentation, f. ex. the blow out at Bravo in April 1977. These articles, like the one about the myth of Red Adair and Boots Hansen, are supplemented with photos, films and radio cuts and a literature database. The web site is built with layers of information.

- The next main theme has a newspaper lay out. It contains articles with important incidents and the influence of Ekofisk on Norwegian society. As an example there is an article about how much money Ekofisk has earned from 1969 to 2003. Nearly 50 percent has gone to the Norwegian state in taxes. The owners share has been about 15 percent.

- Last but not least is the search module which purpose is to make all the material easily accessible. This is the basement in the project. The search module makes it possible to delve into the digital archive and search in seven databases at the same time. More than 4000 photos, 4000 pages of scanned articles, drawings and artefacts etc are available in the databases collected in the project. It is possible to watch a hundred films from beginning to the end and listen to a hundred historical radio cuts. Lots of the films are in English.

It is also possible to search in only books, films, articles, photos, artefacts, radio cuts or drawings. Or you can choose to search in as many categories as you like at the same time.

The method used in Cultural Heritage Ekofisk is now going to be further developed in The Cultural Heritage Plan for the Norwegian Petroleum Sector carried out by the Norwegian Petroleum Museum. This plan is going to be a guideline for future documentation of installations with national value. The next project called Cultural Heritage Frigg is already half way done, this time in cooperation with the scotch, since the gas field Frigg lie on the border between Norway and Scotland. Fortunately it is going to be published in English with the possibility to reach an international audience.