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elf NORGE

FRIGG FIELD PRODUCTION FACILITIES

MONTHLY REPORT

MAY 1976

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LIST OF ATTACHMENTS

- . CDP1 CONCRETE DRILLING PLATFORM : Planning
 - . TP1 TREATMENT PLATFORM N° 1 : Planning
 - . QP LIVING QUARTERS PLATFORM : Planning
 - . DP2 DRILLING PLATFORM N° 2 : Planning
 - . TCP2 TREATMENT & COMPRESSION PLATFORM : Planning
 - . ELF NORGE - FRIGG FIELD : Construction schedule of production facilities - Schedules 1 & 2.
-

Operations on the Frigg site developed favorably during the month of May.

The jacket of the DP2 platform which had left CHERBOURG on May 6, 1976, was successfully launched on May 11, 1976. At the end of the month, the four central piles had been installed.

On the QP platform all the drilling modules were in place. The installation of the insert piles should start at the beginning of June.

The assembly of the gantry crane on CDP1 is continuing according to the planning issued in March. At the end of the month, the main beams were installed, as well as the two transversal beams and two winches.

The first spool of the 8" line was placed and connected to the CDP1 platform.

Four derrick barges worked on the site in May : the ETPM 1601, then the ETPM 701, the LB MEADERS and the DB 22.

The assembly of the TP1 platform was completed with the installation of the temporary modules. The platform left LOCH FYNE on May 22, towed by five tugs, totalling a power of 56.000 hp. The platform is expected to arrive on the Frigg site on June 3, 1976, about ten days ahead of schedule. The construction of the treatment modules in ANTIWERP is following the schedule.

On TCP2, the construction of the upper domes of the caisson was completed. The slipforming of the three columns will start at the beginning of June. The problem relative to the construction of the support frame remains worrying. An agreement is being negotiated with the constructor, which will allow to make up for some of the time lost, by sub-contracting 80% of the construction.

I. OFFSHORE OPERATIONS

1.1. QP installation

The stiffleg structure was lifted on QP on April 30, 1976 with the ETPM 1601, but not set in the correct location. Skidding was necessary and was completed on May 5, with the assistance of the DB 22.

The DB 22 began preparation for lifting the helideck and quarter module. At the same time, divers drilled pile A 12 and fitted the grouting connections and hoses. The grouting of this pile was completed on May 8, 1976, however, Weather Conditions prevented the DB 22 from lifting the quarter/helideck module, before the arrival of the DP2.

This module was lifted by the LB MEADERS on May 20, during a short good weather period. The ETPM 701 arrived in STAVANGER on May 9, 1976 and sailed to the FRIGG field on May 13, after modifications were made to its helideck. On May 24, she moored alongside QP and started the transfer to QP of those items necessary to make QP self contained. The target is to have the QP helideck operational by the 29th and to transfer the personnel from ETPM 701 to QP by helicopter.

1.2. DP2 - Jacket installation

The DP2 jacket left CHERBOURG on May 6, 1976 on the barge INTERMAC 600. The tow lasted four days. In the evening of May 10, it was decided to launch the jacket the next day, May 11, 1976.

Launching and up-ending occurred on May 11 and the jacket was positioned approximately 38 meters west of the expected location with an orientation of 333° true North.

On May 12, the buoyancy tanks and center legs were checked and found OK.

On May 13, Center pile 1 stabbed in B2 and A2 legs. Two buoyancy tanks flooded in each corner.

On May 14 : waiting on weather.

On May 15, center pile 1 stabbed in A3 and B3 legs. Checking of level : Jacket levelled within 2".

On May 16, installation of working platforms on center legs. Inspection performed with a submarine on B2 and B3 and by divers on A2 and A3. Everything was found satisfactory.

On May 17, 18 and 19, waiting on weather.

On May 20 to 25, thirteen additional center pile elements were installed. Only three elements remain to be installed.

Within the next few days, the following operations will be performed :

- . Installation of the remaining elements.
- . Diving and grouting of center piles.
- . Temporary work deck is expected to arrive on the Frigg field at the beginning of next month.

1.3. Lines

The prefabrication of the 8" spool for CDP1 was completed on April 20, onboard MAERSK 7. The operations for the pull-in to CDP1 of the 8" line started April 27 with the positioning of the LB MEADERS on tunnel E and the cleaning of this tunnel by divers. On April 28, the divers removed the clamps and the cap from the steel caisson and disconnected the flanges on the J-tube and the 8" line. The messenger line inside the J-tube was connected to the line from the LB MEADERS, but was found to be blocked. Consequently, the pull-in was stopped to free the location for the ETPM 1601 to lift the stiffleg on QP.

Because of adverse weather conditions, it was impossible to transfer the 8" spool from the MAERSK 7 onto the LB MEADERS, so both barges sailed to STAVANGER where the transfer was realised.

On May 10, the pulling operations re-started and the spool was laid down and pulled through the J-tube into CDP1. The divers moved the spool using



STATUS CDP1
MARS 1976

chain hoists near the flange on the steel caisson and began the bolting of the flange.

This last operation was very time consuming, therefore it was decided to move the LB MEADERS away and to achieve bolting later with divers lock out from the submarine.

On May 26, the submarine INTERSUB 3 attempted to do this operation, but without success due to obstructions inside the caissons which prevented the submarine to land. The 26" spool R6 pull-in to CDP1 should start on May 29, 1976.

1.4. CDP1 structure

The following operations were completed in May :

- . Installation of DORIS generators for gantry.
- . Demobilization of the old helideck.
- . Slab drilling : four holes (total : 7 holes).
- . Installation of RB 150 winch for 26" pull-in.
- . Installation of emergency dewatering pump.
- . Fabrication and installation of steel platforms at + 107 level for DECCA to position the LB MEADERS during pull-ins .
- . Cleaning of outer E tunnel and 8" kill line pull-in (only final bolts tightening remains to be done).
- . Erection of eastern part of the gantry.

The following operations are in progress :

- . Work in tunnels and shaft :
 - final work for 26" pull-in
 - ventilation - 5 man hoist
- . Work on deck :
 - Gantry crane erection (overall progress about 65%)
 - Skid-beams for modules



STATUS CDP1
MARS 1976

- relocation of quarters and equipment on the deck
- slab drilling

. Work at + 107 level :

- Utility riser installation

. Pull-in :

- LB MEADERS will pull-in the 26" spool through tunnel A as soon as no barge is working around QP.

II. PRODUCTION FACILITIES - PHASE I2.1. CDP1 Production facilities2.11 Production modules2.111 Rework PM2 - PM3 - PM4.

- Engineering : 98%
- Procurement : 97%
- Fabrication : 95%

2.112 New modules (production and utilities)

Engineering : Structural : 99%
 Piping : 99%
 Fire & safety : 99%
 Electrical : 99%
 Instrumentation : 99%

Procurement : Structural : 100%
 Piping : 97%
 Equipment : 98%
 Electrical : 98%
 Instrumentation : 92%

Fabrication : REG BOOTH (SD1) : 100%
 PENN & BAUDIN (PH) : 95%
 DE GROOT (WH1A-1B) : 82%
 WILSON WALTON (BR1-BR2) : 84%
 Flare booms : 90%

Modules PM2 - PM3 - PM4 are on the barge DINO 2 in LE HAVRE. Work is progressing on electrical and sea fastening.



Pumphouse PH is complete. Load-out on the KARMOY occurred on May 24, 1976. Sea fastening is in progress.

BR1, BR2 and flare boom are in STAVANGER, stored on the barge TITAN 8.

WH1A - 1B (wellhead modules) are loaded on the barge KARMOY 1. Work is continuing on the modules.

SD1 is at the present time, stored in STAVANGER.

2.2. Treatment platform nr. 1 - TP1

2.211 Construction

The installation of the temporary equipment for towing, immersion and pulling-in of the lines was completed in the middle of May with the lifting of the grouting module. Initially, this had been anticipated to occur on the Frigg site.

The polyurethane foam annulus in the columns at the flotation line were installed. The last equipment for risers and appurtenances have also been installed.

The preparation of the platform for towing was completed on May 22, 1976.

2.212 Towing

The four main tugs totalling a power of 56.000 hp were connected to the platform on May 22. Two smaller tugs were also attached to the platform to assist during the crossing of the northern channel. The platform left LOCH FYNE on May 22, at 21.00.

The crossing of the northern channel with a draught of - 35 meters was completed without encountering any problems, in spite of strong winds from the south-south-east (wind force 8). The platform was then ballasted to a draught of -65 meters and towing continued normally.

On May 31, 1976, at 16.00 the structure had covered 593 nautical miles at the average speed of 2.8 knots (from a total distance of 783 miles).

The arrival on the Frigg site is anticipated to take place on June 3, 1976.

2.22 Temporary decks

(BROWN & ROOT / CMP / MONBERG & THORSEN)

2.221 Engineering

All drawings have been issued including all modifications of deck 24 to accommodate the RB 90 winch.

2.222 Fabrication of deck 23 (MONBERG & THORSEN)

Deck 23 was loaded-out in AALBORG by MONBERG & THORSEN on the barge MORLAND 4 on May 2. The barge arrived in DUNKIRK on May 13, 1976.

The remaining WIMPEY equipment, local office and piping were installed by CMP, who are also to complete the electrical connections.

2.223 Fabrication of decks 21 and 24

. Accommodation deck 21 : This module was loaded-out on barge MORLAND 4 on May 21. Completion work continued until the end of the month.

- . Sheave block deck 24 : This element was finished and is scheduled to be loaded-out on barge MORLAND 4 on May 26, 1976.
- . Some equipment (Manitowoc crane, RB 90 and RB 150 winches) should be delivered at the end of the month before the departure of the barge, which is anticipated around June 1, 1976.

2.23 Engineering of treatment modules

(McDERMOTT-HUDSON)

2.231 Structural engineering

Work on the following items is still in progress :

- . Design of mooring platform/hose landing.
- . Air conditioning supports.
- . Offshore connections of modules 02 and 03.
- . Miscellaneous ladders and staircases.
- . Methanol container landings.
- . Sea fastening for offshore spools.

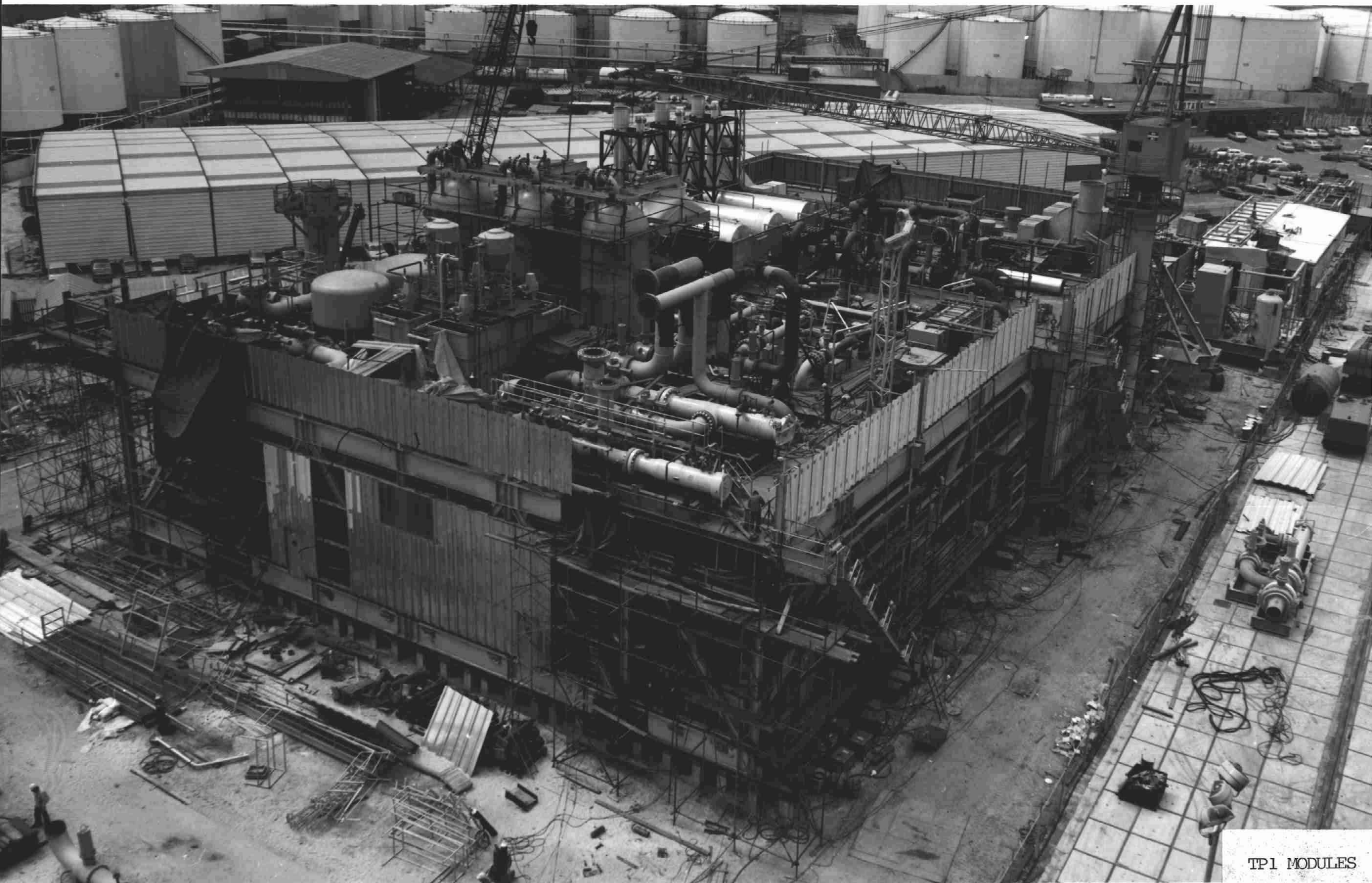
2.232 Mechanical, electrical and instrument engineering

The work being performed at the present time, is only relative to finalization of miscellaneous details.

2.24 Construction of treatment modules and deck units

(MERCANTILE MARINE under McDERMOTT-HUDSON management)

The fabrication programme is following the targets, although the replacement of pad-eyes on modules 01, 03 and 04 remains a worrying matter. The on-shore commissioning of the first two generators started on May 24, 1976. Various load-out methods have been examined, in particular, skidding and roll-on. The final choice should be made by the end of the month.



2.241 Erection of framing and painting

The fabrication of the new pad-eyes for modules 01, 03 and 04 is continuing in two shifts.

The fabrication of various spreader frames was started at the end of the month. The modification of deck unit 06 to adapt the second interface room was nearing completion.

2.242 Prefabrication of piping

Situation on May 24, 1976 :

- . Spools in fabrication : 2326
- . Spools completed : 1920

2.243 Module outfitting

The status at the end of May is as follows (percentage) :

Modules	01	02	03	04	05
Erection of equipment	90	100	85	100	95
Erection of piping	85	85	65	80	65
Electricity	80	90	35	95	95
Instruments	50	85	30	50	5
Cladding	30	20	—	100	100

2.244 Deck unit outfitting

The status at the end of May is as follows (percentage) :

Deck units	06	07	08	09	10	11
Erection of equipment	100	100	100	100	100	100
Erection of piping	—	85	90	95	65	50
Electricity	10	95	80	95	100	65
Instruments	5	80	15	95	90	15



QP PLATFORM

Load-out Module A

2.3. Living quarters platform QP

2.31 Engineering of living quarters building

(McDERMOTT-HUDSON)

2.311 Structural engineering

Review of lifting arrangements and load-out procedures.

Minor modifications are in progress on the access to helihangar.

2.312 Mechanical engineering

The re-design of the second air conditioning unit is nearing completion.

2.313 Electrical engineering

The study of miscellaneous outstanding items is continuing.

2.314 Instrument engineering

Finalization of micellaneous outstanding items.

2.32 Construction of living quarters

(CDLG under McDERMOTT-HUDSON management)

The helihangar was loaded-out on May 24 on barge MORLAND 5. The preparation of barge MORLAND 5, in view of the load-out of module B on June 22 is in progress.

The functional tests in the service area started in the middle of May and are continuing.

2.321 Structure

The reinforcements under the crane pedestals of module B are complete.

2.322 Outfitting

Module A is complete.

Module B will be ready, functional tests included, in the middle of June.

The helihangar is nearly ready : Before load-out the floors remain to be finished and the roof air conditioning unit must be installed, however, it has not yet been delivered.

Battery room : The floors remain to be finished and the doors installed.

The helideck is complete except for paint touch-up.

Other roof units are nearing completion.

2.33 Supervision, control and field communications

(COMSIP under McDERMOTT-HUDSON management)

2.331 QP modules

The functional tests relative to Phase I are complete.

Phase II :

. Terminal cabinet	: Complete
. Teletransmission	: 65%
. Control panel	: 80%
. Mimic panel	: 20%

2.332 TP1 interface rooms

. Interface room nr. 1 : Overall progress is 60%. Completion is expected for the end of June.

Functional tests are to take place from the end of June until mid-July.

. Interface room nr. 2 : Work started at the end of May. Completion is estimated for July 1, 1976.

2.34 Storage of QP modules

As it is not anticipated to place the modules on the QP platform before the summer of 1977, it has been decided to store the modules in the ETPM yard in STAVANGER. The off-loading and storage is scheduled for the second half of August 1976.

Some methods are being examined to implement an onshore pre-hook-up in STAVANGER to ensure good maintenance of the equipment during storage.

2.4. Lines and connections

The orders for the 8"5/8 kill line, 4"1/2 condensate line and two 2"3/8 air and pilot lines have been placed and the delivery dates being closely examined. The 8"5/8 pipes if delivered in July, would allow the completion of the riser to CDP1 and be available as spares should an incident occur during the installation of the CDP1-TP1 line.

The two spools, R5 and R6, for the CDP1 side are complete and onboard MAERSK 7.

The protection of the various lines after laying is being finalized.

The results of the hyperbaric tests are completely known. The mechanical tests of the samples is in progress.

2.5. Telecommunications

2.51 Telecommunications with U.K.

The mast of the antenna was re-assembled in BORDEAUX after interposition of shim plates. The alignment is satisfactory. The study of offshore assembly of the MARCONI antennae is in progress.

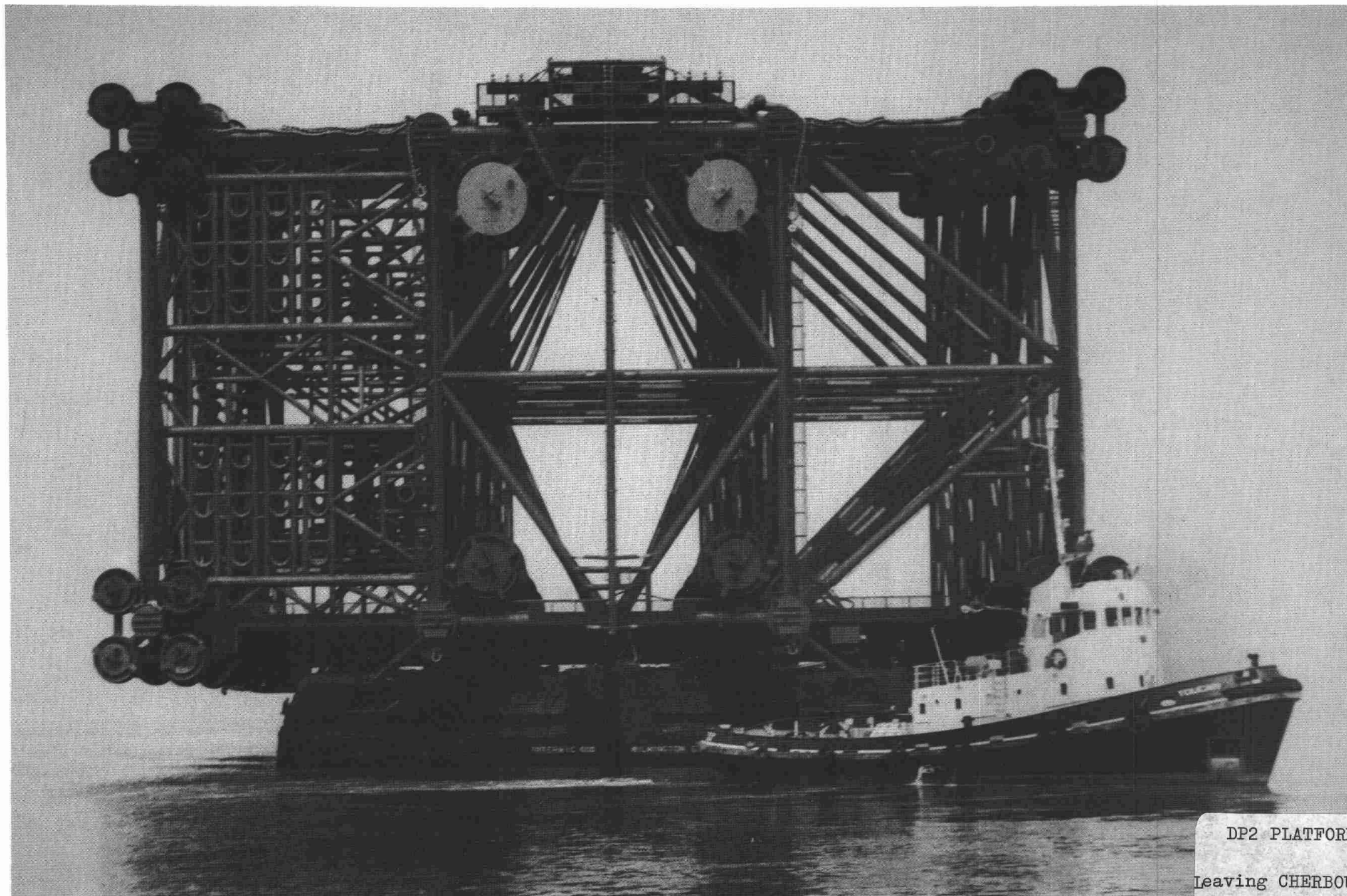
2.52 Telecommunications with NORWAY

The study of onshore assembly of the satellite antenna is complete. The assembly will be realised in STAVANGER during storage of the QP modules.

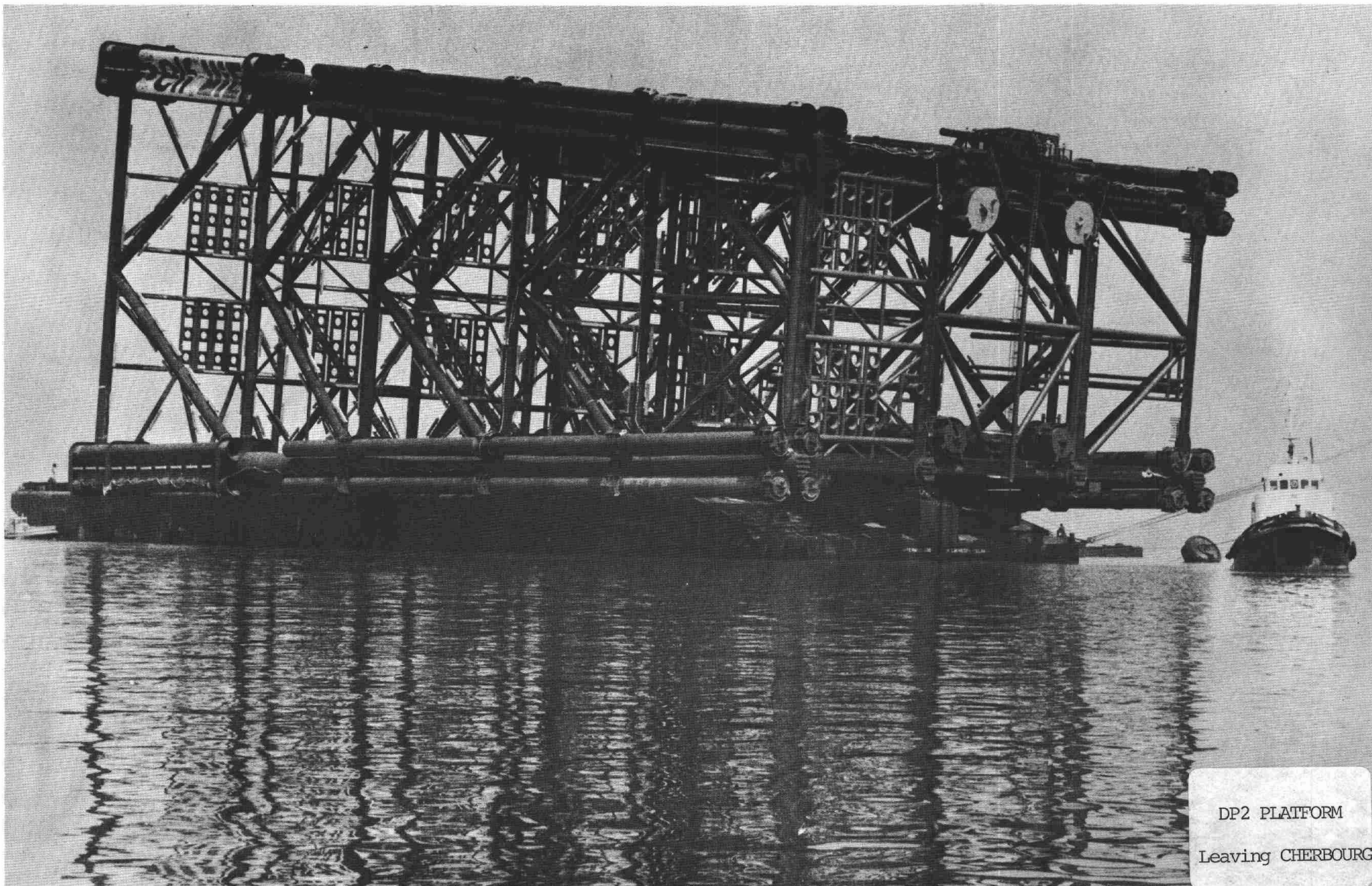


DP2 PLATFORM

General view of model



DP2 PLATFORM
Leaving CHERBOURG



DP2 PLATFORM
Leaving CHERBOURG

III. PRODUCTION FACILITIES - PHASE II

3.1. Drilling platform nr. 2 - DP2

3.11 Jacket

The jacket was loaded on the barge on April 23, 1976. Completion work ended on May 5, 1976.

The installation of several minor stiffeners at level + 6 meters remains to be performed. The INTERMAC 600 left CHERBOURG at 13.30 on May 6, 1976. On May 10, at 20.00, the decision to launch the jacket was taken. Launching occurred at 07.00 on May 11, 1976 and the jacket was set on the bottom at 14.00. The jacket location is 38 meters west and the orientation is 333° or + 13° from the theoretical.

It was not possible to place the jacket on the theoretical location because the steel reinforced flexible closure of the bottom center legs did not withstand the pressure.

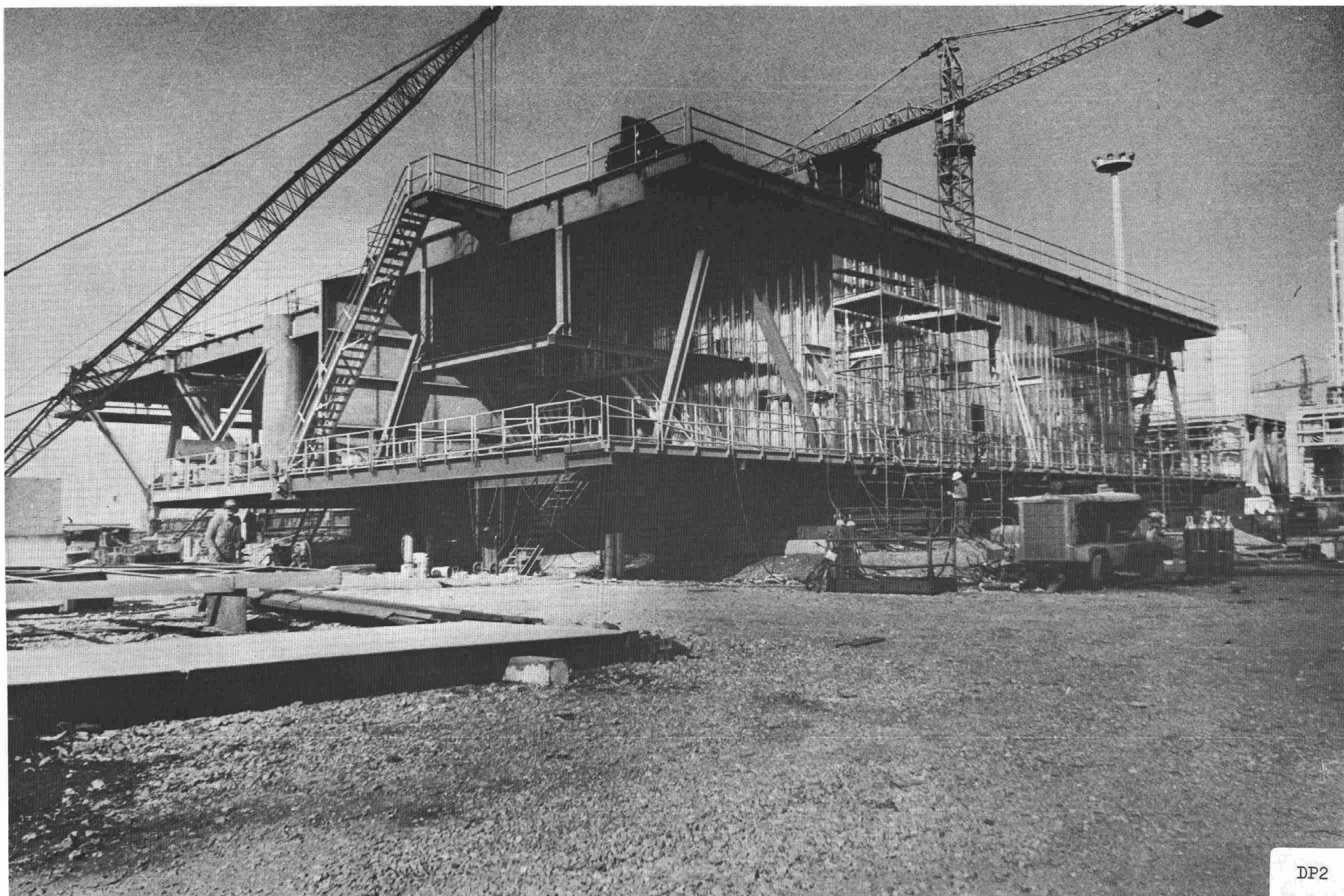
A survey of the jacket using a submarine and divers indicates that the structure did not sustain any damages during positioning operations. Since May 11, 1976, elements of the central piles have been installed.

3.12 Support frame

The problems relative to the engineering and modifications have been solved. The delivery is presently scheduled for July 15, 76. The lifting of the main files (A and B) occurred on May 13 and 14.

3.13 Piles

The second shipment of main piles was loaded on the TENDER CAPTAIN and sailed from ST. WANDRILLE on May 20. Completion of insert piles is forecast for the middle of July.



DP2
Modules

3.14 Production modules

. Engineering :

The total engineering progress is 97%. The detailed engineering progress is as follows :

. General arrangement : 100%
 . Model construction : 95%
 . Piping arrangement : 99%
 . Isoing : 99%

. Procurement :

Procurement progress is 99%. The material delivered on site is 89%, including steel.

The delivery of the equipment is still impeded due to problems encountered in the quality of the materials.

. Fabrication :

The total progress is 72.2 %.

a) Framing construction

The total progress for the four modules is 100%.

Module 01 : 100%	Module 03 : 100%
Module 02 : 100%	Module 04 : 100%

b) Equipment installation

The total progress is 56.8% (prefabrication of piping included).

Module 01 : 41%	Module 03 : 70%
Module 02 : 79.6%	Module 04 : 24%

Pumphouse : 22%.

The completion of the modules is anticipated for October 1976.

3.2. TCP2 Platform

3.21 Structure

3.211 Management

Discussions were started with NORCON to define a new contractual date which will take into account the consequences of the BROWN & ROOT activities on the NORCON operations.

Various schedules have been examined for the period between the end of slipforming of columns and deck erection, however, a decision is still pending.

Change order 20, relative to the replacement of the sand ballast by a heavy ballast, has been signed.

NORCON was asked to send their financial proposal for the following change orders :

- . Change order 19, work relative to riser installation on upper domes and shafts.
- . Change order 14, connections between shaft and steel deck.
- . Change order 16, installation of steel deck on the concrete structure.
- . Change order 29, holes in shaft for the inlet and outlet of sea water pumps.

Discussions relative to these change orders and a definition of the new contractual date will be the subject of a meeting in early June.

3.212 Engineering

The main activities have been :

- . Finalization of the shaft design in relation to the possible exceptional load which could occur during towing (heel of 20° with one damaged cell).
- . A detailed examination of the capability of the cell to support an exceptional load during deep immersion in view of deck erection (risk of implosion).
- . The detailed specifications for instrumentation of the TCP2 platform have been completed and approved by NPD.

3.213 Construction

a) The main activities have been :

- . Concreting of upper domes.
- . Completion of shaft footing rings.
- . Erection of slipform for shaft.

b) The status of progress is as follows :

. Shaft footing rings (Shafts 1-3-5)	: 100%
. Concreting of upper domes	: 100%
. Prestressing of condensate tank	: 99%
. Erection of slipform for shaft 1	: 80%
. Erection of slipform for shaft 3	: 70%
. Erection of slipform for shaft 5	: 25%
. Repair of cracks in inside cells	: 40%
. Repair of cracks in star cells	: 60%

c) The repair procedure applied is as follows :

- . Ultrasonic pre-investigation.
- . Chiselling and cleaning of concrete.
- . Repair of concrete.
- . Post control by Ultra sound.

3.214 Support frame

AKER was unable to fabricate correctly the first elements of the support frame and consequently, would not be able to meet the delivery date.

Considering the important difficulties encountered in fabrication and control (welder qualification, number of welders, dimensional control, management etc...), it was decided at the meeting held in Paris on May 10, 1976, in agreement with AKER and CMP, to create a joint venture CMP/AKER, so that CMP may effectively help AKER.

A very large part of the support frame (total weight of approximately 3200 tons) will be removed from AKER STORD and fabricated in France under CMP responsibility. They, in turn, will sub-contract the part that is to be assembled in DUNKIRK.

A minimum of 2600 to 2700 tons will be removed from AKER STORD. AKER will only fabricate the northern part and will complete the final assembly in their dry dock if the latter is freed by MOBIL.

ELF NORGE, PARIS, to gain time, sent out tenders to find companies capable of fabricating parts of the support frame. It appears that at least four french companies, experienced in this type of work, will be able to fabricate elements of the structure by the end of September 1976.

The only critical problem pertains to the specified steels. Delays in rolling, at the present time put deliveries of these steels in August 1976. These steels would be used to re-make elements not found acceptable at AKER STORD and to re-cut the sheets which were cut too short by AKER and not re-usable by the future sub-contractors.

A meeting with AKER/CMP/NORCON and ELF is anticipated to be held on June 1, 1976, in order to confirm that which had been specified at the meeting held on May 10, 1976 and to chose the sub-contractors and to finalize the elements or work to be removed from AKER STORD.

The delivery of the support frame will be at least two months late. Transport to ANDALSNES should be in February 1977.

CMP Yard

Fabrication is progressing normally, however, the schedule will be completely revised in consideration of the fabrication and assemblies which will be brought to DUNKIRK.

AKER STORD progress

It will be re-examined after the meeting to be held on June 1, 1976 and in consideration of what will be remaining in STORD.

Engineering

The progress of KVAERNER ENGINEERING is following a normal course with additional studies and verifications requested by DNV, TNO and ELF.

The AKER and CMP shop drawings are still being verified by TNO.

3.215 TCP2 riser installation

a) BROWN & ROOT and CHRISTIANI NIELSEN main activities were :

. Load in of all equipment to be installed in the columns at the bottom of cells 3 and 5.

- . Installation of intermediate platforms in columns 3 and 5.
- . Completion of erection of Potain crane in cells 3 & 5.
- . Prefabrication of external risers.

b) The progress of the BROWN & ROOT and CHRISTIANI NIELSEN activities is as follows :

. Yard prefabrication :

. External riser R1 and R2.	: 75%
R3	: 80%
R5	: 50%
R6	: 70%

. Installation :

. Load in columns 3 and 5	: 100%
. Installation of intermediate platforms	: 100%
. Riser support on upper domes	: 10%

3.216 TCP2 temporary equipment

The preliminary specification for temporary accommodation was prepared by BROWN & ROOT. Discussions relative to this specification were held in STAVANGER with the NPD on May 20, 1976.

The bid packages, for tenders to be called on June 1st, for the following modules are being prepared by BROWN & ROOT :

- . Temporary accommodation module.
- . Temporary helideck.
- . Service module.
- . Work module.
- . Equipment module.

3.22 TCP2 Treatment modules

3.221 Structural design

- . Pipe supports : McDERMOTT-HUDSON is still late with the issue of the drawings for pipe supports. This delays the progress in the ORKANGER yard.

The following dates are anticipated by McDERMOTT-HUDSON for the completion of drawings :

Module	02	: May 21, 1976.
Module	03	: May 14, 1976.
Pancake	05	: May 21, 1976.
Pancake	06	: May 21, 1976.
Pancake	07	: June 11, 1976.
Pancake	09	: June 30, 1976.

- . Tender documents for the bridge between TP1 and TCP2 were sent out to various consulted companies on May 13, 1976.
- . The scope of work for the power generation package was issued May 11, 1976.

3.222 Process design

- . NPD asked that certain modifications be made in the fire protection system. These are, at the present time, being examined by ELF-NORGE.
- . The P & ID's of the gas metering should be issued shortly.
- . MAPEGAZ valves and pup pieces : No high pressure Mapegaz valves have yet been delivered in ORKANGER. SEV has had to fabricate and install dummies.

MAPEGAZ is more than one month late in the delivery of these valves. McDERMOTT-HUDSON did not manage very well the problem relative to the welding of the pup pieces at VEROLME (HOLLAND).

- . Isometric drawings : McDERMOTT-HUDSON is late in issuing the isometric drawings and it is delaying the progress at the ORKANGER site.

The dates for the completion of the drawings supplied by McDERMOTT-HUDSON are as follows :

Module 03 : 60% issued - Remainder : June 30, 1976.
 Module 04 : June 28, 1976.
 Pancake 07 : May 26 till June 21, 1976.
 Pancake 09 : June 1, 1976.
 PSF 1 : May 28, 1976.
 PSF 2 : June 11, 1976.

- . 32" pig traps and associated equipment : BROWN & ROOT forwarded only in May the drawings that were expected to be received for the past several months. McDERMOTT HUSON still has to prepare the isometrics from these drawings.

The equipment ordered by BROWN & ROOT and expected to be delivered in June, will arrive in August (verbal information from BROWN & ROOT to McDERMOTT-HUSON).

Over a month ago, McDERMOTT-HUSON asked BROWN & ROOT to forward a more detailed status of these orders : no answer has yet been received.

- . Electrical : The area classification drawings will soon be issued for approval. These drawings take into account the installation of the sales gas metering system and glycol reboilers and contactors as required by NPD/DNV.

The tests of the three turbo-generators (KONGSBERG and PARSONS PEEBLES) were satisfactory. Delivery is scheduled for the end of May, beginning of June.

Testing of the control and mimic panels will be started on May 21, 1976.

Final testing of the switchgear (5,5 KV) was satisfactory. Delivery is scheduled for the end of May.

. Instruments : ELF-NORGE approved the piping lay-out and control scheme of the sales gas metering system.

3.223 Project management services

The three glycol contactors and the three separators fabricated at CMP in DUNKIRK were delivered on schedule and installed on the site in modules 02 and 03.

Pancake 13, will be delayed since the CONTROLEC equipment anticipated to arrive in June, will now be delivered in September.

The re-fabrication of the main deck of module 04 in EGBERSUND will be delayed. The four main beams ordered from GERMANY were to be delivered in May. There will be a delay of one month minimum. Delivery, at the present time, is expected on June 15. Six weeks work will be necessary after the arrival of the beams.

The estimated percentage of completion is as follows :

Structural design and engineering	: 60%
Process design and engineering	: 72%
Project management	: 32%

Number of inquiries issued this month	: 6
Number of inquiries under evaluation	: 36
Number of recommendations to client	: 29
Number of telex orders placed	: 7
Number of formal purchase orders issued	: 18
Number of purchase orders supplement	: 34

Remarks : The delays of McDERMOTT-HUDSON in the issuing of the drawings will be discussed at a management meeting in Paris on May 26, 1976.

3.224 Construction of TCP2 treatment modules

1. Fabrication at ORKANGER

The percentage of progress for the week ending May 16 1976, is as follows :

	Modules	Pancakes	Total
Structure	42%	5,8%	28,4%
Piping	40,1%	15,6%	29,2%
Equipment	63%	-	43,1%
Electrical	9%	0,2%	5,9%
Instrument	0,1%	-	0,06%
Load-out	-	-	-

The overall percentage of completion is : 24,4%

The overall percentage scheduled is : 27,2%

After a meeting with McDERMOTT-HUDSON, SBV and ELF in ORKANGER on May 12, 1976, the following dates were scheduled for the completion of work :

Module 01 : November 22, 1976.

Module 02 : November 22, 1976.

Module 03 : November 22, 1976.

Pancake 05 : October 30, 1976.

Pancake 06 : October 30, 1976.

Pancake 07 : November 30, 1976.

Pancake 08 : November 8, 1976.

Pancake 09 : November 8, 1976.

Pancake 11 : November 15, 1976.

Pancake 12 : November 15, 1976.

PSF 1 and 2 : December 22, 1976.

At the present time, it is difficult to anticipate completion dates for module 04 and pancake 13.

3.23 Compression

Tenders for turbines and compressors are ready to be sent out.

KVAERNER TECHNIP issued a new schedule taking into account the start-up of compression in 1980.

The change orders relative to the change of schedule, the modification of the process diagram and the study of electrical interconnections are being prepared.

Pre-technical consultations have been sent out for the turbo-generators. The information received will allow the choosing of power level in order to satisfy the production needs and plot plan requirements.

Technical consultations have also been sent out for various packages (water distillation, chlorination, fuel gas) to allow progress on plot plans.

Sleeves of aluminum brass for the sea water outlet holes have been ordered and will be delivered next month to NORWEGIAN CONTRACTORS for installation in the concrete columns.

A study was ordered from LABORATOIRE CENTRAL d'HYDRAULIQUE de FRANCE in order to determine the shape and the dimensions of the pipes and bends for sea water outlets.

3.24 Lines and connections

The fabrication of the pipe is in progress.

Tenders for coating were sent out.

IV. CONTRACTS

- . Contract E. 13 - Amendment 8 - MERCANTILE.
Regularization of the 29 change orders for an amount of 9.871.456 B.F.
- . Contract S. 88 - Amendment 6 - McDERMOTT-HUDSON
Supervision of the inspection personnel (McDERMOTT-HUDSON) on the CDLG yard in BORDEAUX.
Estimated cost : 20.000 \$.
- . Contract E. 19 - Amendment 3 - ETPM.
Rental of the barge ETPM 1601 for the installation of the stiffleg on the QP platform.
Estimated cost : 15.247 KF.
- . Contract FM 5 - Amendment 2 - SAIPEM.
Specification of rental rate of the SAIPEM compact rig after March 31, 1976. No amount.
- . Contract E. 16 - Amendment 14. UIE.
Increase of work load on modules 1,2,3 and 4 for DP2.
Estimated amount : 3.556.255 FF.
- . Contract S. 198 - INTERSUB.
Diving services 1976.
Estimated amount : 3.422.000 US dollars.
- . Contract E. 52 - ETPM.
Take-over of the barge ETPM 1601 by ELF from TOM.
Estimated cost : 28.000 KF.
- . Contract S. 181 - Amendment 1 - COMSIP.
Additional compensation for the study of maintenance of the telecommu-
nication installations.
Estimated cost : 15 KF.
- . Contract S. 181 - Amendment 2 - COMSIP.
Maintenance manuals and list of spare parts.
Estimated cost : 1450 KF.

- . Contract S. 109 - Amendment 7 - BROWN & ROOT.
Actualization rates on January 1st, 1976.
Actualization : 7,2%.
- . Contract S. 178 - Amendment 5 - SOFRESID.
New site representative for TCP2 - M. BOUCHERY
Amount : 619.000 FF.
- . Contract S. 178 - Amendment 6 - SOFRESID.
New site representative for TCP2 - M. GERMAIN.
Amount : 267.000 FF.
- . Contract S. 192 - Amendments 9 and 12 - SOFRESID.
New site representatives for TCP2 - M. CORRE and M. CORLIER
Amount : 120.000 FF.
- . Contract S. 178 - Amendment 7 - SOFRESID.
New site representative for TCP2 - M. VIENNE.
Amount : 349.000 FF.
- . Contract S. 192 - Amendment 8 - SOFRESID.
New site representative for TCP2 - M. BERNARD.
Amount : 174.000 FF.
- . Contract S. 199 - TCP2 - SCOP OCEANOGRAPHIE.
Bathymetric studies.
Amount : 100.000 FF.
- . Contract S. 176 - Amendment 1 - SYMINEX.
Geotechnical instrumentation - additional studies.
Amount : 917.000 FF.
- . Contract S. 141 - Amendment 2 - TNO (Holland).
Additional control and inspection of the TCP2 structure.
Cost : 110.000 FF.

. Contract S. 208 - A.C.B.

New site inspector for TCP2.

Cost : 495.000 FF.

. Contract E. 10 - Amendment 4 - NORWEGIAN CONTRACTORS.

Steel deck agreement with AKER.

Cost : 95.000.000 NKr.

. Contract S. 131 - Amendment 3 - McDERMOTT-HUDSON.

Additional engineering and management services. (Change orders 70-88).

Cost : 118.389 £.

. Contract S. 131 - Amendment 4 - McDERMOTT-HUDSON.

Extension of existing billing rates up till July 1, 1976.

No amount.

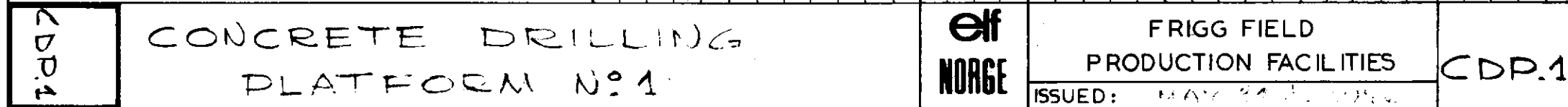
. Contract S. 131 - Amendment 5 - McDERMOTT-HUDSON.

Additional engineering and management services. (Change orders 188-189).

Cost : 117.624 £.

+++++

CDDP.1



[illegible]

TCP
2

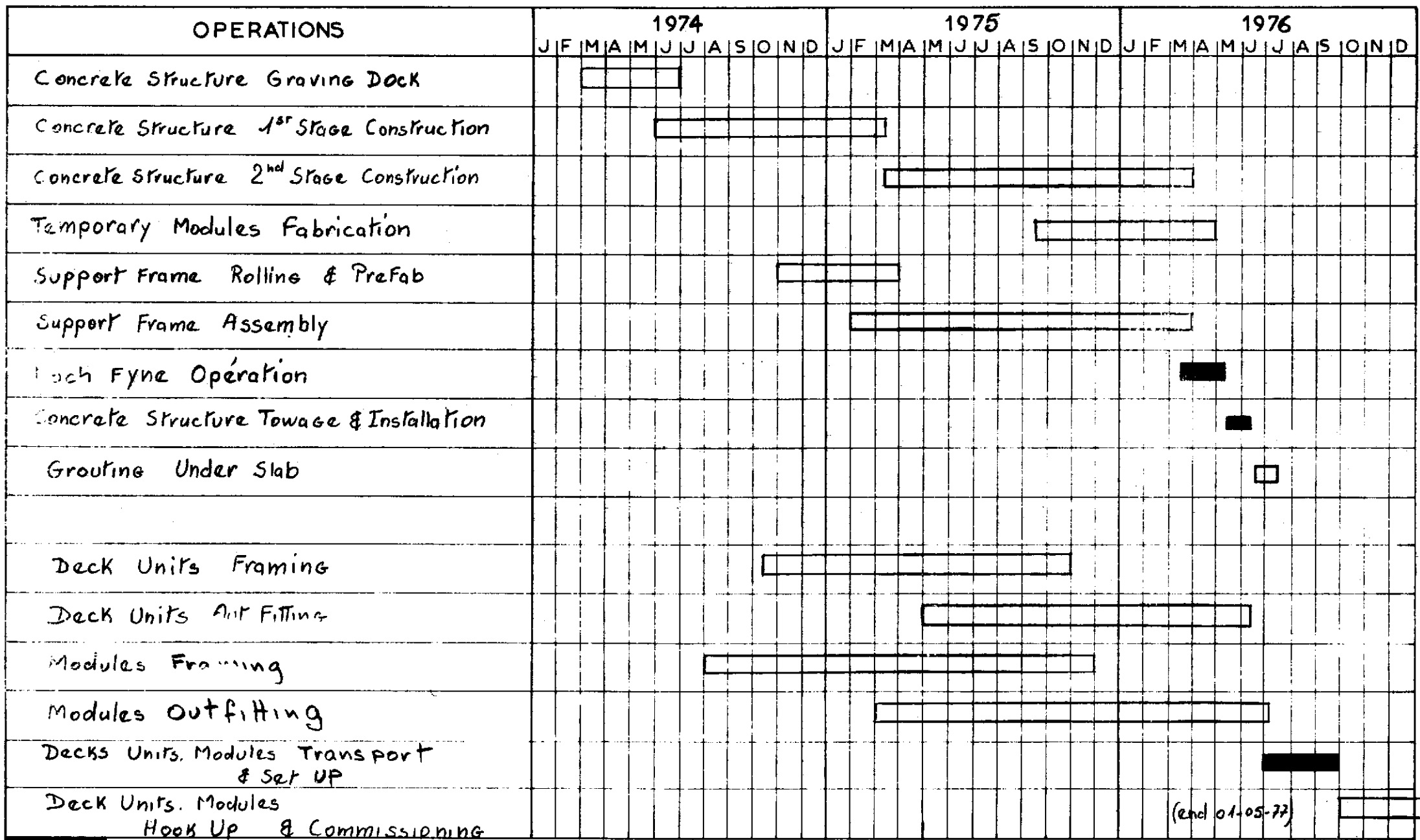
TREATMENT AND COMPRESSION
PLATFORM N°2

elf
NORGE

FRIGG FIELD
PRODUCTION FACILITIES

ISSUED: 31 MAY 1976

TCP 2



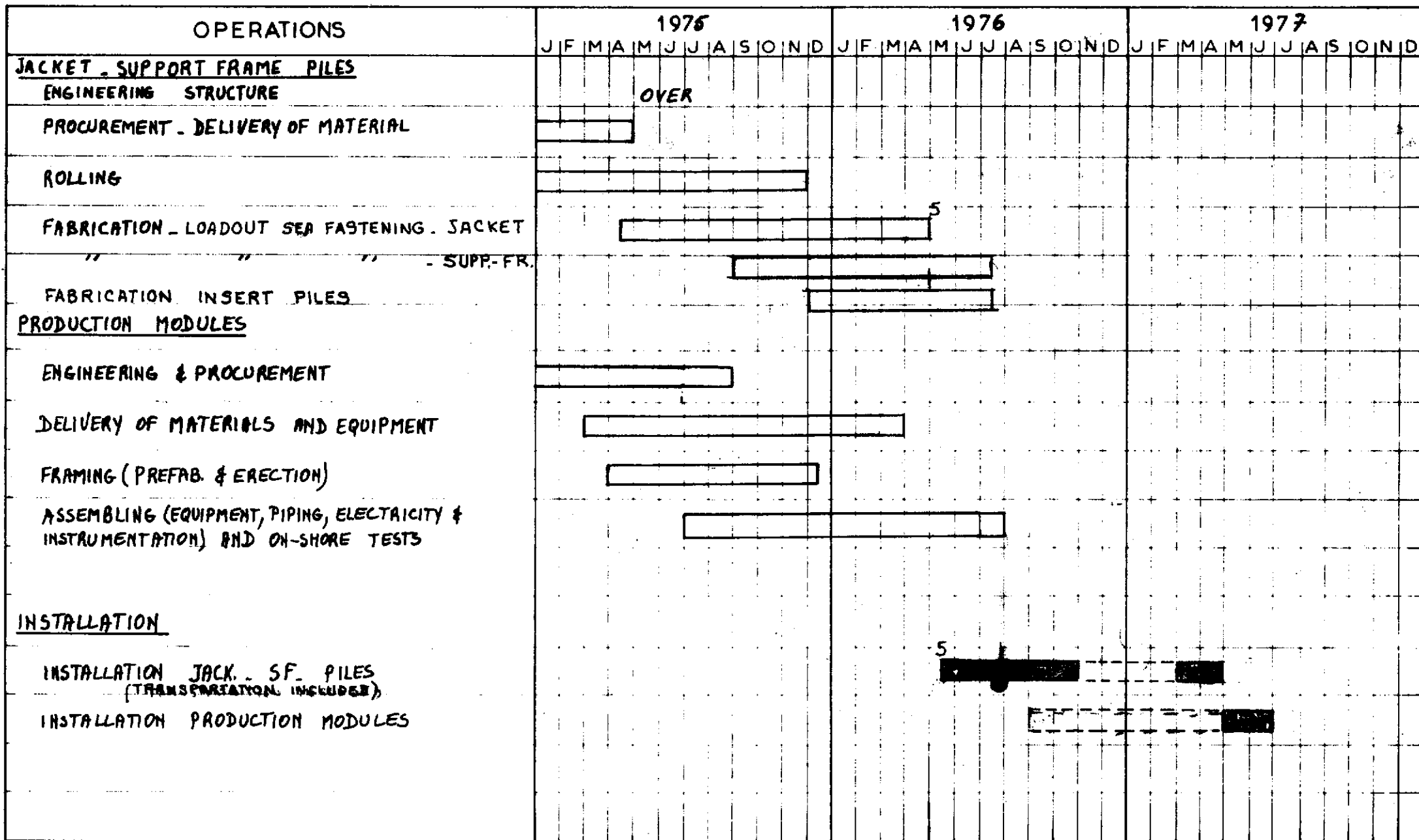
TREATMENT PLATFORM N°1

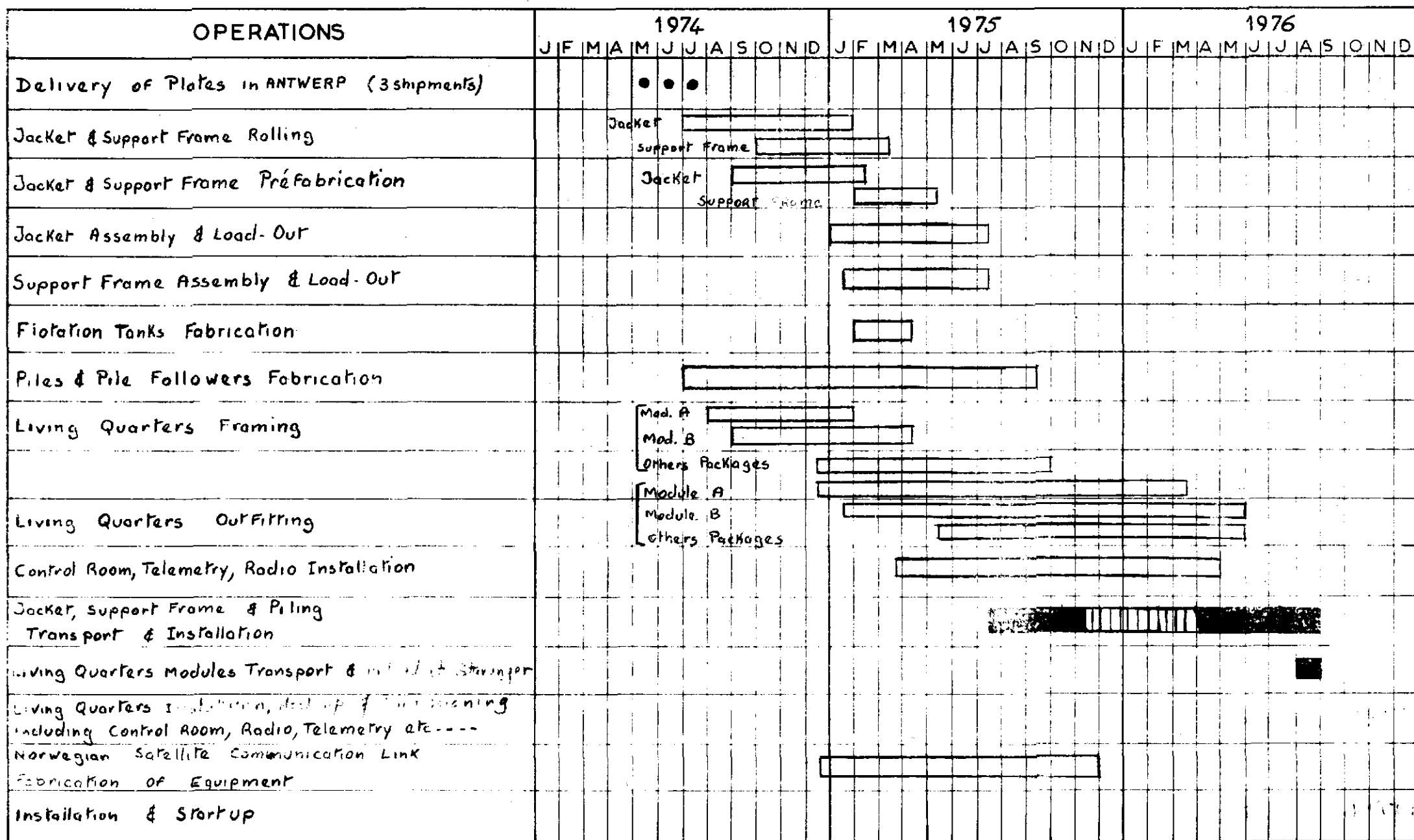
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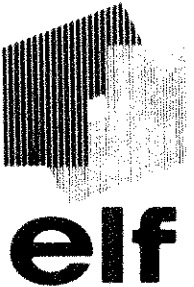
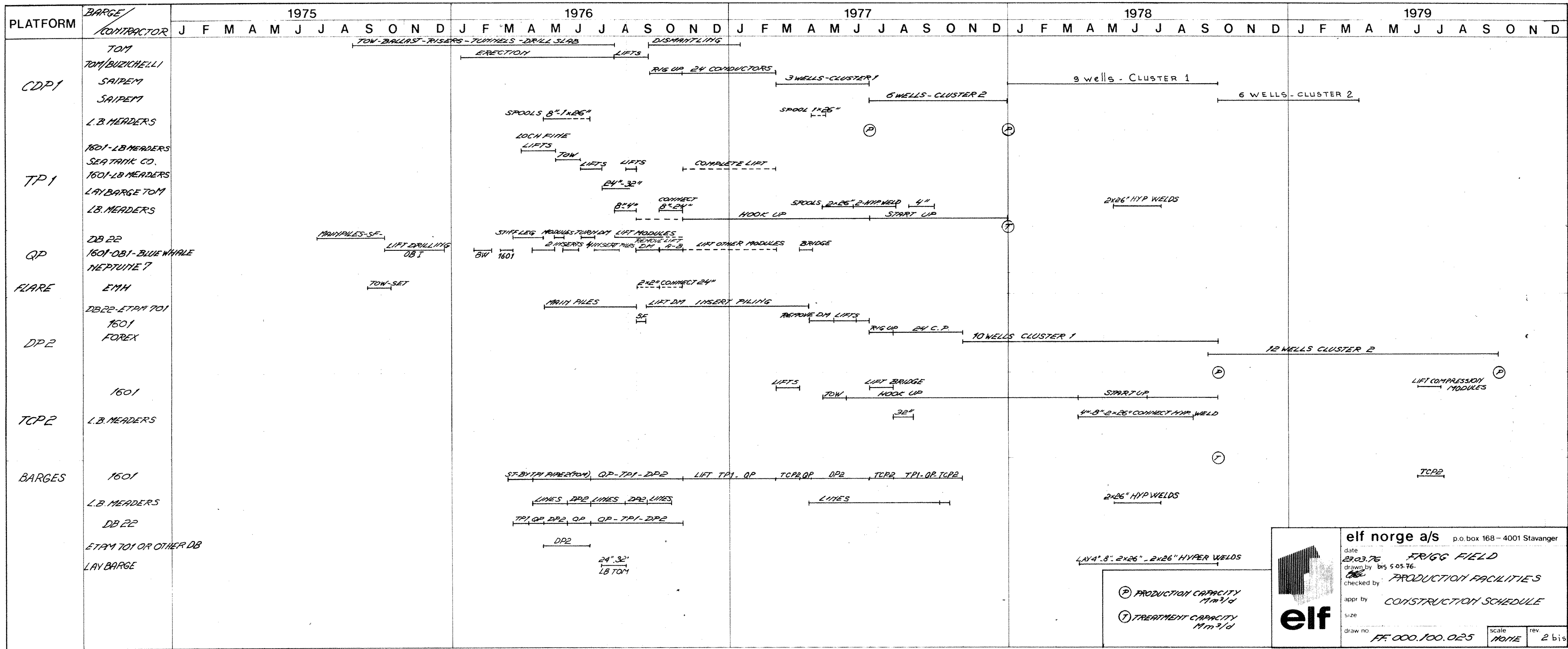
FRIGG FIELD
PRODUCTION FACILITIES

TD1

(end 01-05-77)







elf norge a/s p.o. box 168 - 4001 Stavanger
date 23.03.76 FRIGG FIELD
drawn by bis 5-05.76.
checked by PRODUCTION FACILITIES
appr by CONSTRUCTION SCHEDULE
size
draw no. FF.000.100.025 scale NONE rev. 2 bis

PLATFORM	BARGE / CONTRACTOR	1975												1976												1977												1978												1979																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									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