



**sea tank co**

---

**SIR ROBERT MC ALPINE & SONS, LTD.**

**ELF NORGE A/S**

---

**FRIGG FIELD**

**TREATMENT PLATFORM N° 1**

**TP1**

---

**MONTHLY REPORT**

**N° 14**

**TP1-A-205-9**

**SCF - 008**

**20 Mars 1975**



ELF-NORGE FRIGG TREATMENT PLATFORM N°1  
CONTRACTOR'S MONTHLY REPORT N°14  
TO 20TH MARCH, 1975

LIST OF CONTENTS

- SECTION I - DESIGN PROGRESS REPORT
- A/ General Report
  - B/ Structure drawings
  - C/ Model tests
  - D/ Temporary works and construction facilities
- II - SITE PROGRESS REPORT
- A/ General Report
  - B/ Progress schedule
  - C/ Labour Report
  - D/ Plant Report
- III - PROCUREMENT PROGRESS REPORT
- A/ Bulk items
  - B/ Prefabricated and brought in items
- IV - SUPPORT FRAME
- V - IMMERSION EQUIPMENTS
- VI - RISERS AND J TUBES
- VII - GROUTING
- VIII - MARINE OPERATIONS
- IX - ANTISCOURING
- X - PROGRAMMES
- XI - PHOTOGRAPHS

SECTION I - DESIGN PROGRESS REPORT

---

## I - DESIGN PROGRESS REPORT

### A/ General Report

- Deballasting procedures were finalized for the tow out from basin (March 12th) which was made with the help of compressed air.
  
- Apart of site procedures related to design main activity for the period was to review calculation notes bound to the 4 m increase of the caisson i.e. :
  - stability note
  - columns verification with load on top
  - test reports analysis
  
- Design criteria were proposed for the Loch Fyne deep immersion and submitted to DnV.
  
- Protections at towing points were proposed by S.T.C.

### B/ Structural drawings

Revised drawings for the extended caisson were completed and submitted to ELF and DnV.

Current revisions to accomodate BR fixings are progressing.

### C/ Model tests

Additional tests were performed at NSMB to check the structure's behaviour with its support frame.

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

I DESIGN PROGRESS REPORT

(D) Temporary Works & Construction Facilities

Section of Work	Percentage Complete		Comments
	Engineering	Drafting	
<u>TEMPORARY WORKS</u>			
Items 1-15 - 100% Complete			
<u>CONSTRUCTION FACILITIES</u>			
20. Sheet Pile Sea Wall	100	100	
21. Basin Excavation	100	100	
22. Basin Well Pointing	100	100	
23. Tower Crane Erection	100	100	
24. Slipform Shutters to Caisson Walls	100	100	
25. Concrete Placing Booms	100	100	
26. Causeway to Floating Jetty	100	100	
27. Floating Jetty	100	100	
28. Offshore Moorings	100	100	
29. Sea Wall Removal & Dredging	100	100	
30. Tow Out and Moor	100	100	
31. Connect Services after Tow Out	100	100	
32. Slipform Shutters to Columns	100	100	
33. Construction Hoists to Columns	95	95	
34. Dismantle Tower Cranes	75	75	
35. Clear Platform for Tow	0	0	
36. Connect Tugs and Slip Moorings	0	0	

SECTION II - SITE PROGRESS REPORT

---

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY PROGRESS REPORT NO. 14

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT

(A) GENERAL REPORT

1. General Comment

The platform base was successfully floated and towed out of the construction basin to it's new position off-shore on 12th March.

Since then work has been in progress to establish a pontoon bridge between the shore and the platform.

When this is completed and services to the platform installed, further construction of the platform will proceed.

2. Photographs

Three photographs, taken on 19th March, are included at the end of this Report. Two are aerial photographs which show the platform moored in it's final position off-shore, where the next stages of construction will take place. The third shows the equipment pontoon moored alongside the platform with the first section of shore to platform access bridge in position.

3. Weather

The weather during the past month has been mainly dry but cold with only occasional outbreaks of rain.

4. Labour

Details of the effective Labour strength are given in Part (C) of this Section.

Labour relations during the past month have been satisfactory.

5. Plant & Equipment

Details of the principle items of Plant being used on construction of the Elf Platform and its associated works are included in Part (D) of this Section.

Cont'd/.....

II SITE PROGRESS REPORT (Cont'd)

(A) GENERAL REPORT

6. Temporary Works

(a) Access Roads

During the month the road through the caisson roof shutter fabrication area has been completed.

Work has also been in progress to improve the access road into the Site.

(b) Services

Laying of ducts alongside the Site access road to accommodate the incoming G.P.O. telephone cable has been completed.

(c) Camp

In Phase III Section of the Camp, installation of services has been substantially completed in the 4 No. dormitory blocks so far erected, and these should shortly be ready for occupation.

Casting of the concrete floor slabs for the 4 No. remaining blocks has also commenced.

The extension to the Camp Canteen has been completed and is now in service.

(d) Wharf

During the month the permanent landing ramp for the Western Ferries boats was completed.

(e) Additional Canteen opposite the Main Site Office

This was completed and opened for service of meals on 17th March, 1975.

(f) Caisson Roof Shutter Fabrication Area

A layer of stone has been laid over most of the area, but due to the bad ground conditions it was decided that a further layer of mass concrete was necessary. Laying of this concrete is now in progress.

(g) Caisson Cell Roof Shutter Units

Work has continued on the fabrication of these units with 3 No. complete, and a further 3 No. under construction.



II SITE PROGRESS REPORT (Cont'd)

(A) GENERAL REPORT

7. Construction Basin & Permanent Structure

Removal of the basin sea-wall, by dredger was completed on 11th March, 1975, and the platform was successfully floated and towed out to it's new position off-shore on the high tide during the late morning and afternoon of the 12th.

Since then, work carried out has involved the positioning of an equipment pontoon alongside the landward side of the platform, and the erection of the first section of the pontoon bridge which will give access to the platform from the shore.

8. Materials

During the month delivery of most materials has been satisfactory but late issue of information and last minute changes by the designers with respect to certain of the 'built-in' items have resulted in delivery problems.

9. Programmes

An updated detailed Main Programme was issued on 13th March, 1975.

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT (Cont'd)

(B) PROGRESS SCHEDULE

1. Temporary Works & Construction Facilities

Section of Work	Percentage Complete		Progress for Month (Percent -age)	Comments
	Programmed	Actual		
<u>TEMPORARY WORKS</u>				
1. Office Accommodation				
(a) McAlpine	100	100	-	
(b) Sea Tank	100	100	-	
(c) Shell	100	100	-	
2. Camp Accommodation				
(a) Phases I & II	100	100	-	
(b) Phase III	100	55	10	
3. (a) Canteen	100	100	-	
(b) New Main Site Canteen	100	100	5	
(c) Extension to Camp Canteen	100	100	70	
4. Site Water Supply	100	100	2	2nd Filtration Plant now operational
5. Electricity Supply to Site	-	90	10	
6. Telephones	-	-	-	37 No. line are now in use on the Site. The G.P.O. are taking steps to make 50 lines available.
7. Site Foul Drainage	100	100	-	
8. Wharf	100	100	1	
9. Auxiliary Concrete Batcher	100	100	-	
10. Main Concrete Batcher	100	100	-	
11. Concrete Mix Approval	100	100	-	
12. Reinforcement Yard	-	100	-	
13. Joiners Shop	-	100	-	
14. Fitters Shop	-	100	2	
15. Prestressing Store	-	100	-	

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT (Cont'd)

(B) PROGRESS SCHEDULE

1. Temporary Works & Construction Facilities (Cont'd)

Section of Work	Percentage Complete		Progress for Month (Percentage)	Comments
	Programmed	Actual		
<u>CONSTRUCTION FACILITIES</u>				
20. Sheet Pile Sea Wall	100	100	-	
21. Basin Excavation	100	100	-	
22. Basin Well Pointing	100	100	-	
23. Tower Crane Erection	100	100	-	
24. Slipform Shutters to Caisson Walls	100	100	-	
25. Concrete Placing Booms	100	100	-	
26. Prepare Floating Jetty	100	75	20	
27. Prepare Offshore Moorings	100	97	22	
28. Sea Wall Removal & Dredging	100	100	44	
29. Tow Out and Moor	100	100	100	
30. Connect Services after Tow Out	-	-	-	
31. Slipform Shutters to Columns	-	-	-	
32. Construction Hoists to Columns	-	-	-	
33. Dismantle Tower Cranes	-	-	-	
34. Clear Platform for Tow	-	-	-	
35. Connect Tugs & Slip Moorings	-	-	-	

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT (Cont'd)

(B) PROGRESS SCHEDULE

2. Permanent Structure

Section of Work	Percentage Complete		Progress for Month (Percent -age)	Comments
	Programmed	Actual		
1. Precast Skirt Sections				
(a) Make	100	100	-	
(b) Place	100	100	-	
2. Caisson Base Slab 0.50m	100	100	-	
3. Prestress Base Slab	100	100	-	
4. Vent Pipework	-	*38	-	
5. Grouting Pipework	-	*21	-	
6. Piezometer Pipework	-	*25	-	
7. J-Tubes	-	25	-	
8. Sea Bed Riser Tunnels	-	33	-	
9. Immersion Pipework	-	3	-	
10. Caisson Dwarf Walls	100	100	-	
11. Caisson Walls in Basin	100	100	-	
12. Complete Fillet in Basin	100	100	-	
13. Caisson Walls at Moorings	-	-	-	
14. Complete Base Slab	-	-	-	
15. Caisson Ballast Concrete	-	-	-	
16. Construct Columns (2 No.)	-	-	-	
17. Prestress & Grout Columns	-	-	-	
18. Caisson Roofs	-	-	-	
19. Immersion Module & Cabling	-	-	-	

\*Figures given in last month's report incorrect

U.I.E.

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT

(c) LABOUR REPORT

The effective Labour strength, taken as the average of the totals on each Wednesday of the month was as follows:-

McAlpine Labour

	<u>Elf</u>	<u>Ardyne Point</u>
Steelfixers (including S/Fixer Labourers)	13	20
Joiners (including Joiner's Labourers)	12	55
General Labourers	17	151
Other Trades	<u>21</u>	<u>383</u>
	<u>63</u>	<u>609</u>

NOTES :

1. Elf numbers are averages of men employed on the Construction of the Elf Platform.
2. Ardyne Point numbers are averages of men engaged upon completing, running and maintaining the Site facilities for the benefit of all Platforms under construction at Ardyne Point.

Subcontractor's Labour on Site at the 20th of the month

Kockum	6
Tyers Welding	1
Sterling Construction	29
Terrapin	25
H.G.S. Limited	31
Findlay	17
Kilpatrick	18
Tractor Shovels	<u>5</u>
	<u>132</u>

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

II SITE PROGRESS REPORT

(D) PLANT REPORT

Plant Return for major items of equipment in effective use.

<u>Crawler Cranes/Excavators</u>	2 No. NCK 1405 2 No. NCK 605 2 No. Priestman Lion III A 1 No. NCK Andes C41B 1 No. NCK Rapier 305 1 No. NCK Penine
<u>Back Actor Excavators</u>	1 No. $\frac{5}{8}$ cy. Hydraulic Excavators 1 No. $1\frac{1}{4}$ cy. " "
<u>Crawler Tractor/Dozers</u>	2 No.
<u>Tracked Shovel Loaders</u>	6 No.
<u>Wheeled Tractors</u>	5 No.
<u>Wheeled Shovel/Excavators/Loaders</u>	7 No.
<u>Dumptrucks</u>	17 No.
<u>Mobile Cranes</u>	1 No.
<u>Truckcretes</u>	3 No.
<u>Dumpers</u>	9 No.
<u>Concrete Batcher</u>	1 No. Winget 2x2cy. (Batcher No. 1) 1 No. Winget 2x1cy. (Batcher No. 2)
<u>Tower Cranes</u>	1 No. Record 646E (Reinf. Yard) 4 No. Record 764CDM (Elf Platform)

Also, Generators, Welding Sets, Lighting Sets, Concrete Vibrators, Mobile Concrete Mixers, Pumps, Transport Vehicles, Air Compressors, Piling Hammers and Extractors, Fuel and Water Bowers, Chainsaws, Saw Benches, Boilers, Transformers, Battery Charger, Grabs, Rollers, Reinforcement Cutting and Bending Machines, Storage Tanks, Aggregate Screening Plant, Mobile Toilets, Boats, Aggregate Hoppers, Coaches, pontoons, Cement Silos, Concrete Pumps, Concrete Placing Booms, Cement Tankers.

SECTION III - PROCUREMENT PROGRESS REPORT

---

ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

III PROCUREMENT PROGRESS REPORT

(A) BULK ITEMS

MATERIAL	ORDER PLACED	TOTAL QUANTITIES DELIVERED		QUANTITY DELIVERED FOR MONTH	COMMENTS
		SCHEDULED TO MEET CONSTRUCTION PROGRAMME	ACTUAL		
Concrete Aggregate	15/1/74	19250 tonnes	53800 tonnes	8440 tonnes	
Concrete Sand	15/1/74	12031 tonnes	27380 tonnes	3160 tonnes	
Cement	7/1/74	6898 tonnes	6898 tonnes	8 tonnes	See Not. 1
Reinforcement		5900 tonnes	6070 tonnes	NIL	Delivery Completed

NOTES :

1. Cement called forward to suit consumption and storage space.



ELF-NORGE FRIGG TREATMENT PLATFORM NO. 1

CONTRACTOR'S MONTHLY REPORT NO. 14

TO 20TH MARCH, 1975

III PROCUREMENT PROGRESS REPORT (Cont'd)

(B) FABRICATED AND BOUGHT-IN ITEMS

NOTE : All items listed in our Report No. 12, but not listed below, have been received.

Item	Order Placed	Fabrication	Delivery Required	Delivery Made	Comments
<u>Caisson Walls at Jetty</u>					
(a) Plates for ladders	3016/NE/186 (13/12/74)	F & E Metals Newcastle	13/1/75	24/12/74	Delivery Complete
(b) Sockets Type F for crane fixings	By McA. Office, London				Delivery Complete
(c) Padeyes Type 3 " 5 " 7	Reqn. V66/68 dated 14/2/75	South Dock Ironworks Sunderland	10/3/75 10/3/75 10/3/75		
(d) Plates Type 18	Reqn. V66/69 dated 14/2/75	F & E Metals Newcastle	10/3/75		
(e) Cast In Plates for roof shuttering		A. Findlay			Delivery Complete
(f) Unistrut P330 Channels	3016/NE/211 (26/2/75)		26/3/75		
(g) Vent fixing frames & plates	3016/NE/209 (7/3/75)	Avingrade Eng. Ltd.	10/3/75	21/3/75	Order not yet complete
(h) 180 l.m. 273mm O.D. Seamless Steel tubing and couplings for vent pipe-work	Reqn. V66/81 dated 27/2/75	Tube Development Ltd.	20/3/75	25/3/75	Delivery Complete
(i) Vent fix frames & plates	Reqn. V66/82 dated 3/3/75	Avingrade Eng. Ltd.	2/4/75		

Cont'd/....

III PROCUREMENT PROGRESS REPORT (Cont'd)

(B) FABRICATED AND BOUGHT-IN ITEMS

Item	Order Placed	Fabrication	Delivery Required	Delivery Made	Comments
(j) Padeye Sockets	3016/NE/228 (21/3/75)	F & E Metals Ltd.	10/4/75		
<u>Thickening to Base Slab</u> Plates	Reqn. V66/83 dated 3/3/75	F & E Metals Ltd.	31/3/75		

SECTION IV - SUPPORT FRAME

-----

IV - SUPPORT FRAME

- Design

- Support frame completed by MDH
- Appurtenances along columns are on "HOLD" due to same reasons as mentioned in our previous report.

- Fabrication

Progress (see photographs hereby)

support frame and steel caps	70 %
tie in cans	65 %
miscellaneous	25 %

- . Loading quay is near completion
- . Fabrication of transverse trusses slowed down in Bonneval
- . Spiral stair cases are now waiting for galvanization
- . Boat fenders are at the stage of shops drawings and material supplies.

SECTION V - IMMERSION EQUIPMENTS

---

V - IMMERSION EQUIPMENTS

Design progress

Hydraulic devices	95 %
electric	85 %
electronics	90 %
pipng	100 %
immersion temporary bridge	50 %

Fabrication

- Industrial disputes at Sandouville prevented final tests on the module to be carried out : these tests are scheduled for the end of the month.
- Immersion bridge
  - winches and hydraulic set 80 % completed
  - auxiliary power set (100 KVA) ordered
  - pulley blocks and cables ordered.

SECTION VI - RISERS AND J TUBES

---

VI - RISERS AND J TUBES

Suspension rings at + 7.00 and + 14.00 were lowered by 2 m in order to deliver the auxiliary suspension ring earlier to WIMPEY.



SECTION VII - GROUTING

-----

VII - GROUTING

- A new series of tests were carried out by SOLMARINE at DnV intention varying grout mixes composition.
- Grouting plant is being fabricated.

SECTION VIII - MARINE OPERATIONS

---

## VIII - MARINE OPERATIONS

- TP1 structure was floated out from its basin March 12th and connected to its mooring. All in satisfactory conditions.
  
- Noble Denton and Associated requested damage protection in front of exposed perimeter vaults to be set before reaching a 15 m draft. In the same respect NDA requested that either damage stability either protections be investigated for the tow at shallow draft, deep immersions at Loch Fyne and tow at sea, respectively for caisson and columns.
  
- Protruding external fixings were listed by S.T.C. and recommendations were made with the help of its consultant SMIT INTERNATIONAL for NDA approval through ELF.
  
- ELF and S.T.C. proposed some deep immersion criteria for Loch Fyne to DnV and, as a preliminary, DnV agreed on twice 48 H at 97 m draft and two months at 87 m draft.

### LOCH FYNE MOORING

Mooring system was specified according to survey and preliminary soil results (gravity core samples) = i.e. :

- two legs 102 mm ORQ chains (North and West) with one tensioning barge each.
- one leg 76 mm ORQ chain (East) with a buoyant pontoon.
- one leg 76 mm ORQ chain (South).

SECTION IX - ANTISCOURING

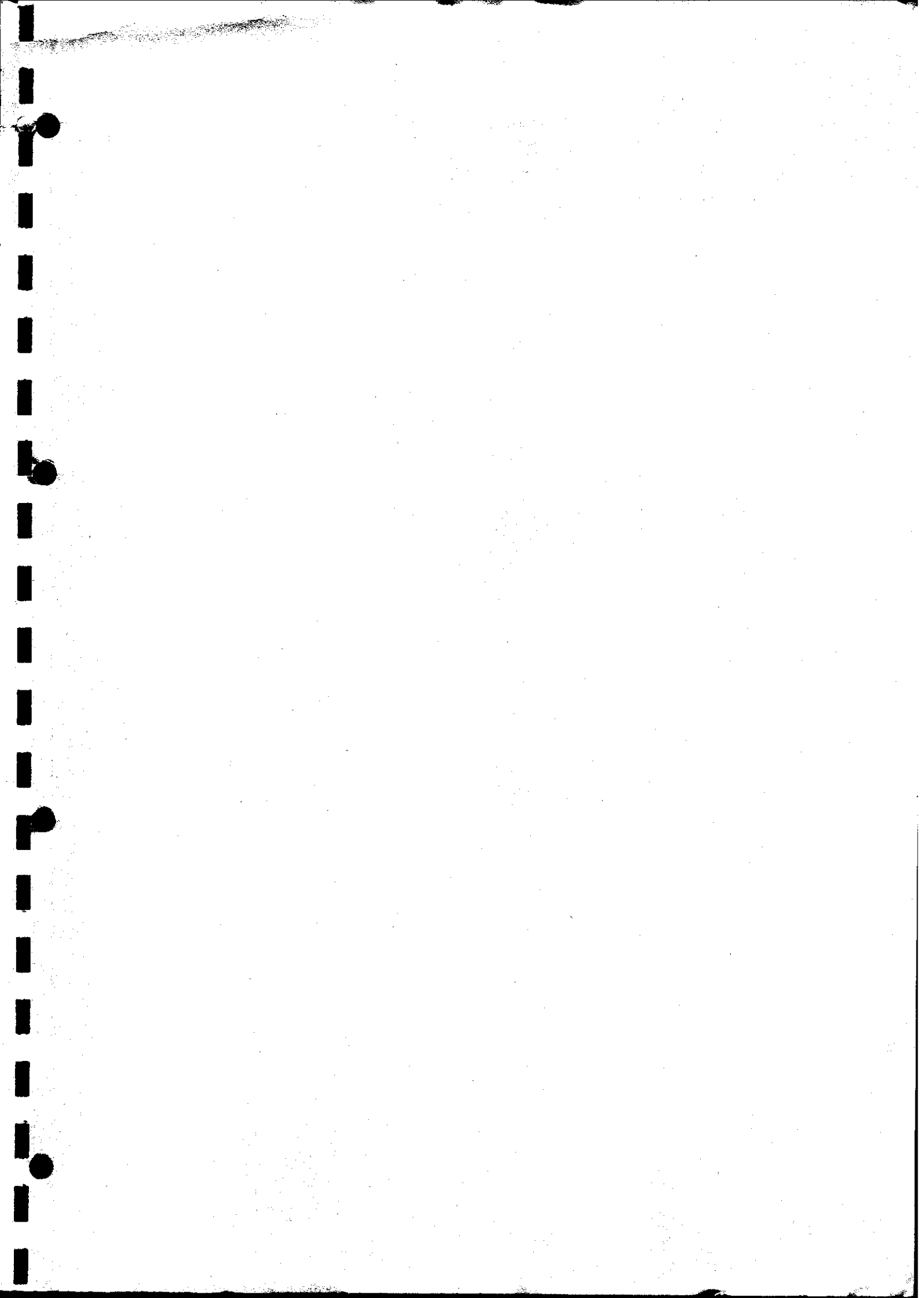
-----

SECTION X - PROGRAMMES

---

X - PROGRAMMES

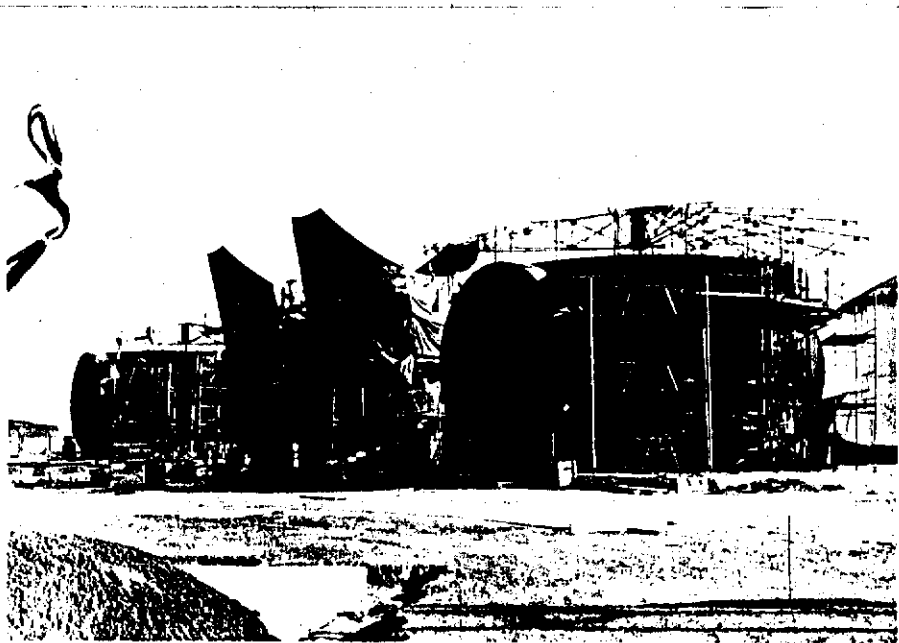
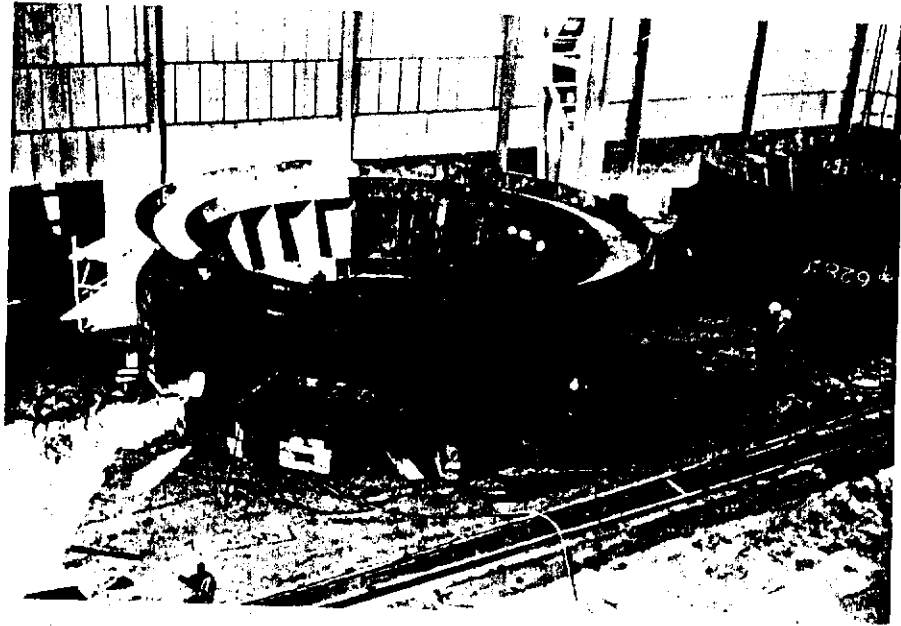
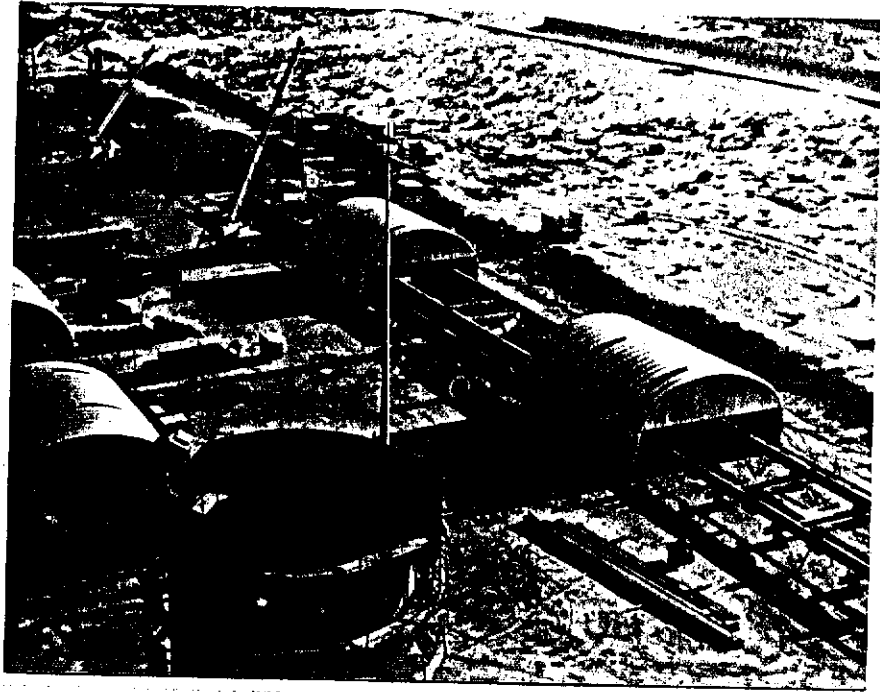
- Three months programme for structure's erection was issued March 14th.
- Overall programme was not given by BR/ELF - yet.





SECTION XI - PHOTOGRAPHS

-----





75/217/20

ELF PLATFORM MOORED OFF-SHORE,  
CONSTRUCTION BASIN ON RIGHT.

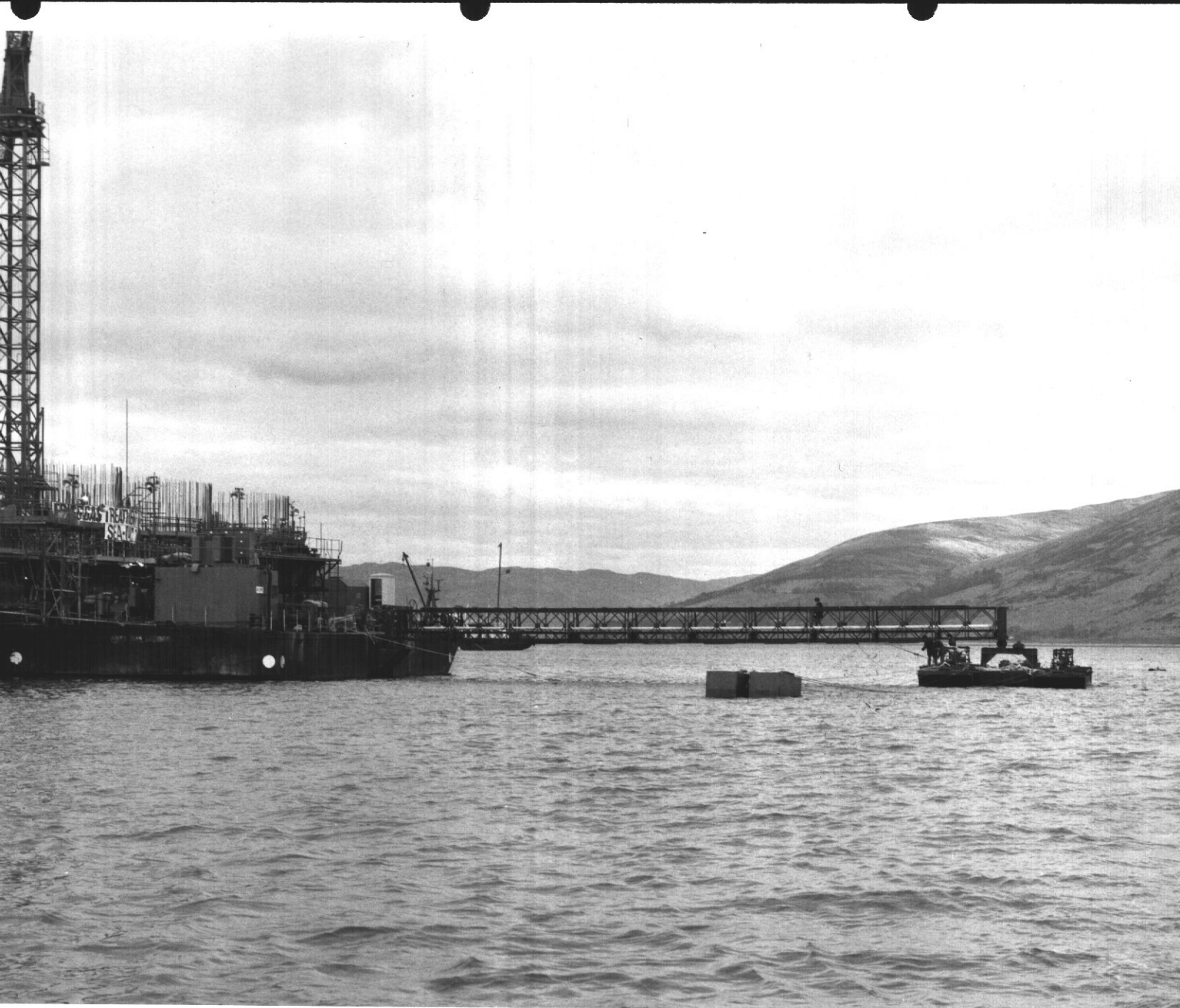
19. 3. 75



75/217/13

ELF PLATFORM MOORED OFF-SHORE

19. 3. 75.



75/217/6 EQUIPMENT PONTOON MOORED ALONGSIDE ELF  
PLATFORM, FIRST SECTION OF ACCESS BRIDGE  
ERECTED

19. 3. 75.