7. CONSTRUCTION METHODS AND TIMES

Introduction

7.1 The discussion of outline designs has shown that although several are technically adequate there is doubt over the feasibility of constructing some of the structures. In this section methods of construction are discussed and alternative ways of building floating islands, semi-submersibles and gravity platforms are compared. The development of the basic 2500 MW station to 5000 MW and 10,000 MW is considered in Section 7.63 onwards.

Floating and semi-submersible islands

General

7.2 Three possible methods by which these types of island could be built have been considered. In outline these methods are:

A. Dry and wet basin construction. Most of flotation raft is built in a dry basin which is then flooded allowing the raft to be towed to a wet basin. At this deeper water site the raft is completed, the remainder of the island is constructed and the nuclear plant is installed. The island with its plant is then towed out to its operating site.

B. Single basin construction. Complete construction of the island and installation of plant is carried out in a dry basin. This basin is flooded to allow the finished island to be towed out to its operating site.

C. Modular construction. The raft of the island is divided into a number of smaller modules. Each module is built in a dry basin and then towed to the wet basin where the raft sections are joined to one another. Construction then proceeds as for A above.

7.3 One other approach to building a semi-submersible island has also been investigated. This is:

D. Double dry basin construction. The flotation raft with legs is built in one dry basin. Simultaneously the deck and the nuclear plant are built in a second dry basin. The raft and legs are towed out to a sheltered deepwater site where they are ballasted down. Using the deck for temporary buoyancy the plant and deck is towed over the legs and connected to them. The completed structure is then towed to its operating site.

7.4 These four methods, their site requirements and outline construction are discussed in the following sections.
Towing power/frontal area/speed relationship

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