

**CHAPTER II
ITER PLANT DESIGN DESCRIPTION**

TABLE OF CONTENTS

SECTION 1.0:

1.0 INTRODUCTION 1.0-1

SECTION 2.0:

2.0 ITER PLANT CONTROL & OPERATION 2.0-1
2.1 Plant control system..... 2.0-1
2.2 ITER plant operation..... 2.0-3
2.3 Plant operational sequence..... 2.0-4

SECTION 3.0:

3.0 ITER PLANT LAYOUT AND BUILDINGS 3.0-1
3.1 General features of radiologically controlled buildings 3.0-4
3.2 Building configuration and equipment arrangement..... 3.0-7
3.3 Configuration of other buildings and structures..... 3.0-17
3.4 Assessment..... 3.0-20

SECTION 4.0:

4.0 SUMMARY OF SYSTEM DESIGN..... 4-1-1
4.1 Vacuum vessel and in-vessel components 4-1-1
4.2 Magnet system..... 4-2-1
4.3 Cryogenic system..... 4-3-1
4.4 Fuel cycle..... 4-4-1
4.5 Cryostat and thermal shields..... 4-5-1
4.6 Water cooling system..... 4-6-1
4.7 Plasma diagnostic system..... 4-7-1
4.8 Heating and current drive (H&CD)..... 4-8-1

SECTION 5.0:

5.0 ITER PLANT SERVICES..... 5.0-1
5.1 Steady state electrical power supply network..... 5.0-1
5.2 Component cooling water system 5.0-5
5.3 Chilled water system..... 5.0-8
5.4 Potable and fire water system..... 5.0-10
5.5 Sanitary and industrial sewage..... 5.0-10
5.6 Steam, condensate and demineralized water..... 5.0-11
5.7 Compressed air systems 5.0-12
5.8 Breathing air systems..... 5.0-13
5.9 Nitrogen, helium and specialty gas systems..... 5.0-13
5.10 Site tunnel layout..... 5.0-14
5.11 Analytical laboratory..... 5.0-15

SECTION 6.0:

6.0 TOKAMAK – INITIAL ASSEMBLY.....	6.0-1
6.1 Alignment strategy.....	6.0-1
6.2 Tolerance control.....	6.0-1
6.3 Outline assembly procedure.....	6.0-2
6.4 Assembly operations.....	6.0-3
6.5 Assembly schedule and resources.....	6.0-4
6.6 Assembly hall utilization.....	6.0-5
6.7 Tool fabrication	6.0-5
6.8 Site facilities	6.0-6

SECTION 7.0:

7.0 TOKAMAK MAINTENANCE.....	7.0-1
7.1 Basic approach and general criteria.....	7.0-1
7.2 In-vessel maintenance.....	7.0-5
7.3 Ex-vessel maintenance	7.0-17
7.4 In-hot-cell maintenance.....	7.0-24
7.5 Development plans.....	7.0-29
7.6 Assessment.....	7.0-30