

# NATIONAL COMPACT STELLARATOR EXPERIMENT

## PHYSICS VALIDATION REPORT

### TABLE OF CONTENTS

	<u>Page</u>
<b>Executive Summary</b>	ES-1 thru ES-12
Chapter 1 <b>Motivation and Goals</b>	1-1 thru 1-10
Chapter 2 <b>Physics Design</b>	2-1 thru 2-30
Chapter 3 <b>Engineering Design</b>	3-1 thru 3-36
Chapter 4 <b>Equilibrium and Flux Surface Integrity</b>	4-1 thru 4-27
Chapter 5 <b>Ideal Magnetohydrodynamics Stability</b>	5-1 thru 5-28
Chapter 6 <b>Resistive Stability</b>	6-1 thru 6-6
Chapter 7 <b>Heating Methods</b>	7-1 thru 7-36
Chapter 8 <b>Transport</b>	8-1 thru 8-16
Chapter 9 <b>Configuration Flexibility and Robustness</b>	9-1 thru 9-32
Chapter 10 <b>Discharge Scenarios</b>	10-1 thru 10-20
Chapter 11 <b>Power and Particle Handling and First Wall</b>	11-1 thru 11-33
Chapter 12 <b>Diagnostics</b>	12-1 thru 12-10
Chapter 13 <b>Project Plans and Management</b>	13-1 thru 13-7
Chapter 14 <b>Reactor Potential of Compact Stellarators</b>	14-1 thru 14-6
<b>Authors and NCSX Team</b>	1 thru 2
<b>Glossary and Definitions</b>	1