

*Training workshop on the technology and the
performances of desalination systems*

ICTP, Trieste, 11 –15 May 2009

DEEP: Installation and practice

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Prerequisites

- Hardware: PC for office works
- Operating system: MS Windows 2000/XP
- Application: MS Excel 2000/XP
- Disk space required for Excel files: Total ~ 10 MB

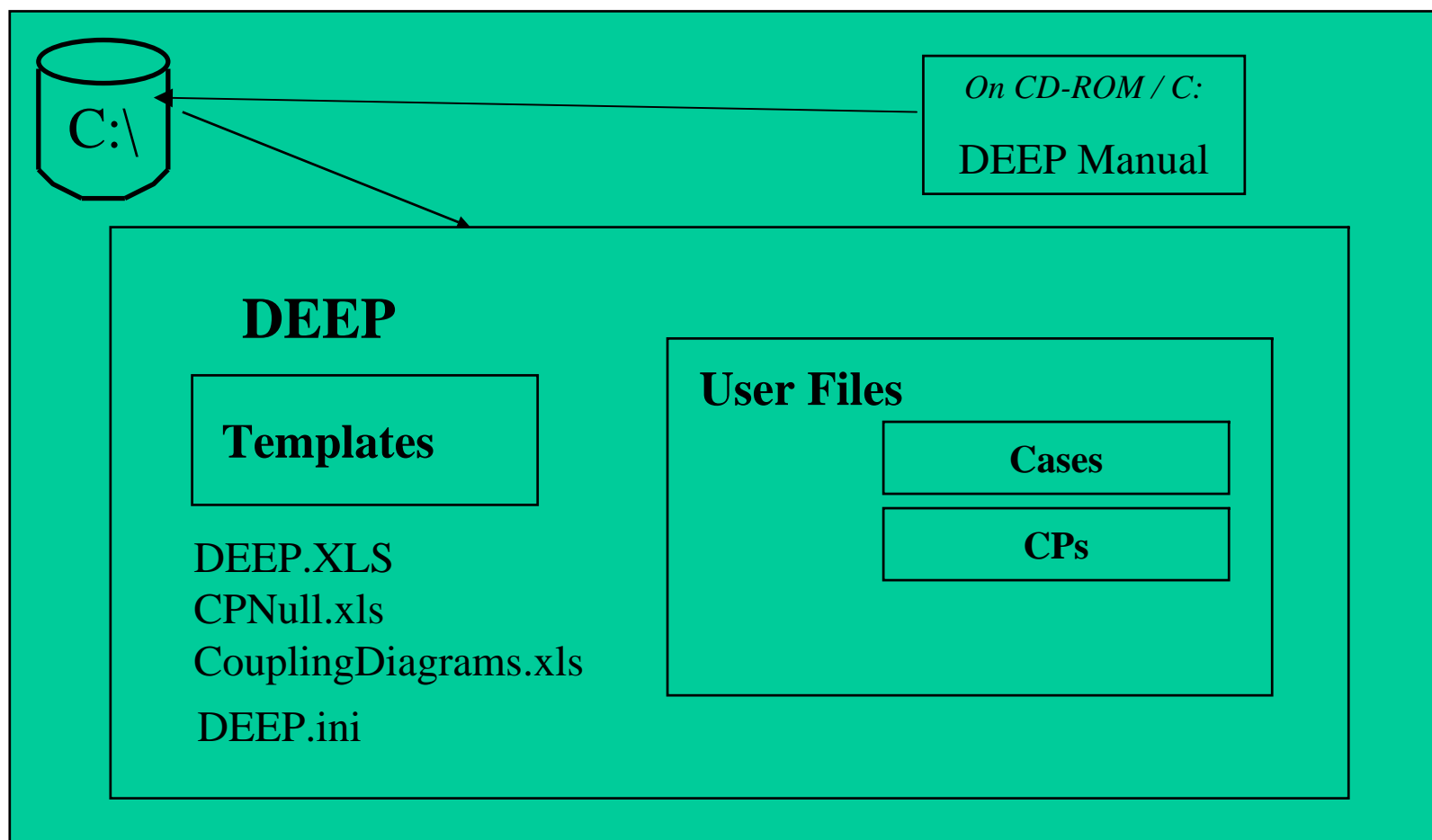
- Distribution Media:
 - CD-ROM with DEEP 3.0
 - Download from the Web site

<http://www.iaea.org/OurWork/ST/NE/NENP/NPTDS/Projects/nd/index.html????>

Installation Procedure

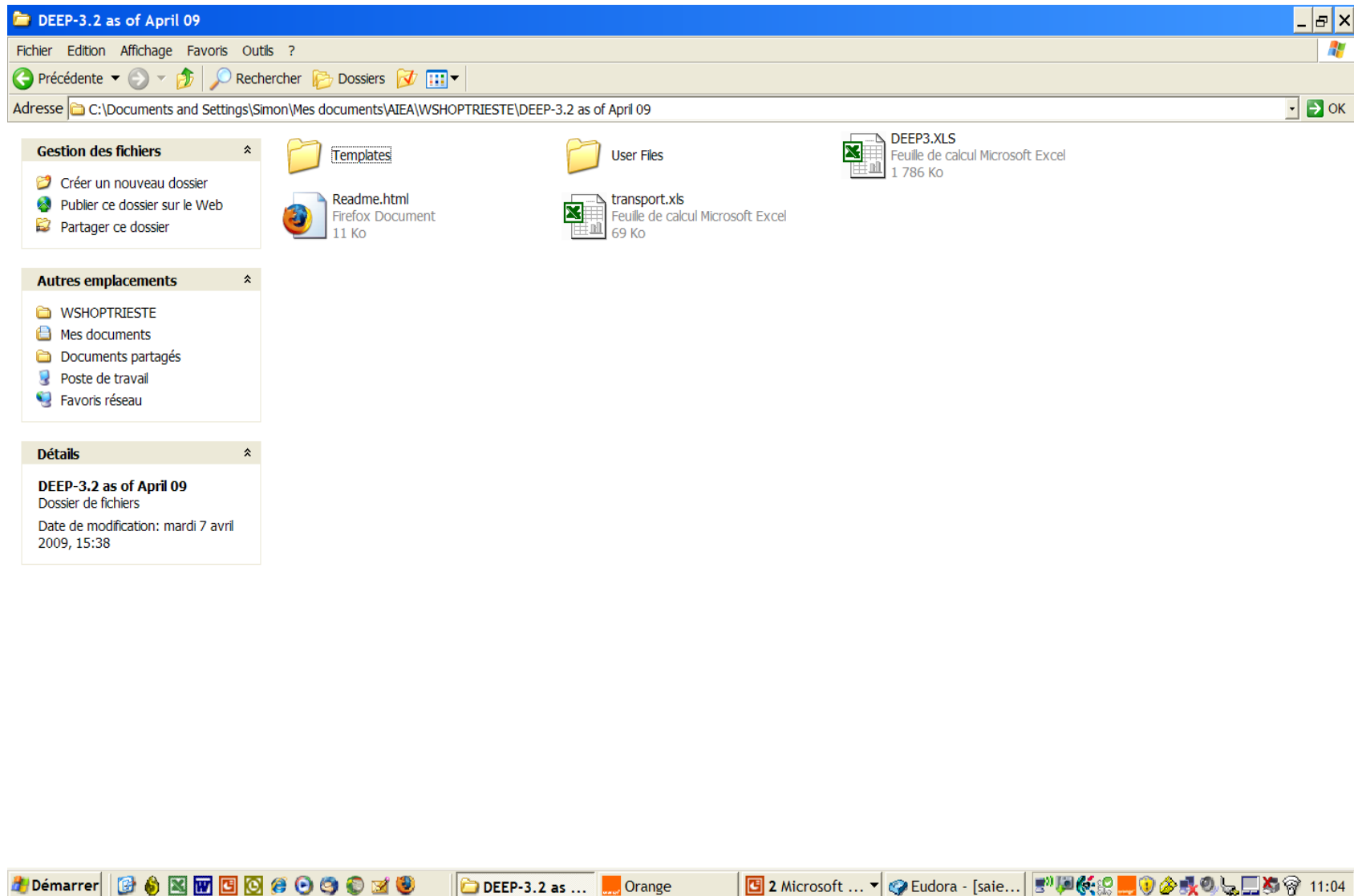
- Copy the contents of the distribution disks onto drive C: (the hard disk).
 - Use your preferred file commander or
 - Create & use source and target directory in MS Windows
- **Optional:**
 - Make the copy of important files using Copy (^C) and Paste (^V) commands.
 - Drag shortcut of DEEP.xls to the desktop or menu/command bars.

DEEP 3.0 Directory Structure on the Disk C:

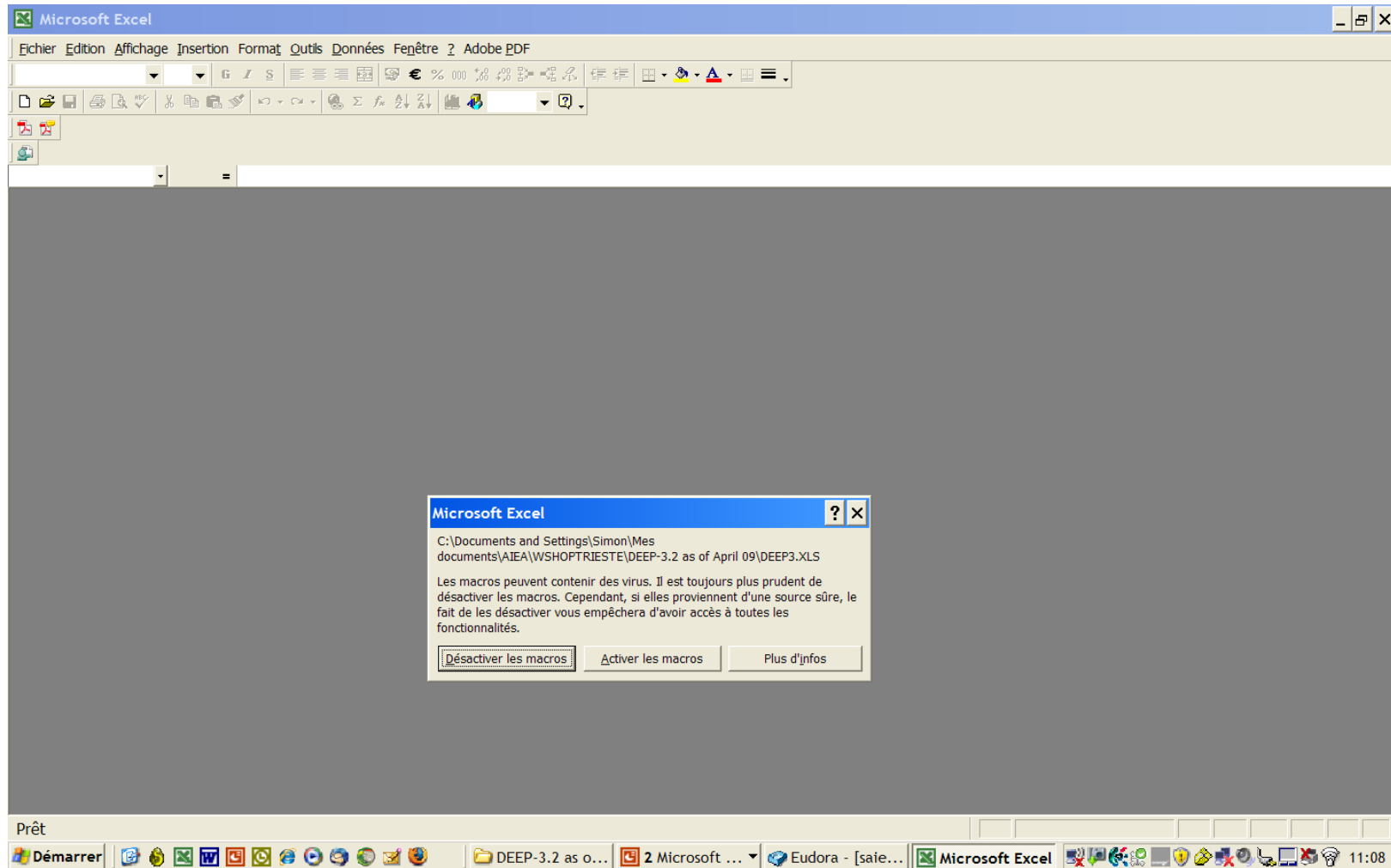


Practice

- Install



- Double click on « DEEP.XLS »
- Click on « activate micros »



International Atomic Energy Agency
Desalination Economic Evaluation Programme (DEEP)
DEEP 3.2 December 2008



Microsoft Excel

Le classeur que vous avez ouvert comporte des liaisons avec un autre classeur. Voulez-vous mettre à jour ce classeur avec les modifications apportées à l'autre classeur?

- Pour mettre à jour toutes les liaisons, cliquez sur Oui.
- Pour conserver les informations actuelles, cliquez sur Non.

Oui Non

Disclaimer: The International Atomic Energy Agency does not bear any responsibility for the accuracy of results obtained using this code.

Specify Case and Configuration Data

Project:

Case:

Water Plant Capacity
Total Capacity: m³/d

Feed Salinity ppm

Feed Temperature deg C

Interest Rate %

Purchased Electricity Cost \$ / kWh

Power Plant Data

Thermal Power MWt
Net Electric Power MWe
Fuel Cost
Specific Construction Cost \$ / kW

Distillation Plant Data

Maximum Brine Temperature deg C
Steam Temperature (optional) deg C
Specific Construction Cost \$ / (m³/d)

Reverse Osmosis Plant Data

Energy Recovery Fraction %
Recovery Ratio (optional) %
Design Flux l / (m² h)
Specific Construction Cost \$ / (m³/d)

First, select a coupling configuration from the matrix of supported energy sources and desalination technologies

	MED	MSF	RO	MED-RO	MSF-RO	
N U C L E A R	NUCLEAR STEAM TURBINE	<input type="text" value="NSC+MED"/>	<input type="text" value="NSC+MSF"/>	<input type="text" value="NSC+RO"/>	<input type="text" value="NSC+MED-RO"/>	<input type="text" value="NSC+MSF-RO"/>
	NUCLEAR GAS TURBINE	<input type="text" value="NBC+MED"/>	<input type="text" value="NBC+MSF"/>	<input type="text" value="NBC+RO"/>	<input type="text" value="NBC+MED-RO"/>	<input type="text" value="NBC+MSF-RO"/>
	NUCLEAR HEAT	<input type="text" value="NH+MED"/>	<input type="text" value="NH+MSF"/>			
F O S S I L	STEAM CYCLE - COAL	<input type="text" value="COAL+MED"/>	<input type="text" value="COAL+MSF"/>	<input type="text" value="COAL+RO"/>	<input type="text" value="COAL+MED-RO"/>	<input type="text" value="COAL+MSF-RO"/>
	STEAM CYCLE - OIL	<input type="text" value="OIL+MED"/>	<input type="text" value="OIL+MSF"/>	<input type="text" value="OIL+RO"/>	<input type="text" value="OIL+MED-RO"/>	<input type="text" value="OIL+MSF-RO"/>
	GAS TURBINE / HRSG	<input type="text" value="GT+MED"/>	<input type="text" value="GT+MSF"/>	<input type="text" value="GT+RO"/>	<input type="text" value="GT+MED-RO"/>	<input type="text" value="GT+MSF-RO"/>
	COMBINED CYCLE	<input type="text" value="CC+MED"/>	<input type="text" value="CC+MSF"/>	<input type="text" value="CC+RO"/>	<input type="text" value="CC+MED-RO"/>	<input type="text" value="CC+MSF-RO"/>
	FOSSIL HEAT	<input type="text" value="FH+MED"/>	<input type="text" value="FH+MSF"/>			
R E N	RENEWABLE HEAT	<input type="text" value="RH+MED"/>	<input type="text" value="RH+MSF"/>		<input type="text" value="RO"/>	
	STAND-ALONE RO		<input type="text" value="SA-RO"/>		<input type="text" value="SA"/>	

Configuration Switches

Steam Source

Extraction / Condensing

Backpressure

Thermal Vapor Compression

Yes

No

Backup heat source

File Name:

O.K.

Cancel

Dossiers

- Nouveau dossier
- Dossier sur le Web
- Dossier

Raccourcis

- as of April 09
- Documents partagés
- Travail
- Internet

Actualisation: mardi 7 avril



CC+MSF.xls
Feuille de calcul Microsoft Excel
210 Ko

COAL+MED.xls
Feuille de calcul Microsoft Excel
202 Ko

COAL+MSF-RO.xls
Feuille de calcul Microsoft Excel
246 Ko

NSC+MED - Using Rankine Cycle.xls
Feuille de calcul Microsoft Excel
204 Ko

NSC+MSF - Using Carnot Cycle.xls
Feuille de calcul Microsoft Excel
206 Ko

NSC+MSF-RO - Using Rankine Cycle.xls
Feuille de calcul Microsoft Excel

CC+MED.xls
Feuille de calcul Microsoft Excel
208 Ko

CC+MSF-RO.xls
Feuille de calcul Microsoft Excel
249 Ko

COAL+MED-RO.xls
Feuille de calcul Microsoft Excel
241 Ko

ff.xls
Feuille de calcul Microsoft Excel
113 Ko

NSC+MED-RO - Using Carnot Cycle.xls
Feuille de calcul Microsoft Excel
258 Ko

NSC+MSF - Using Rankine Cycle.xls
Feuille de calcul Microsoft Excel
211 Ko

CC+MED-RO.xls
Feuille de calcul Microsoft Excel
244 Ko

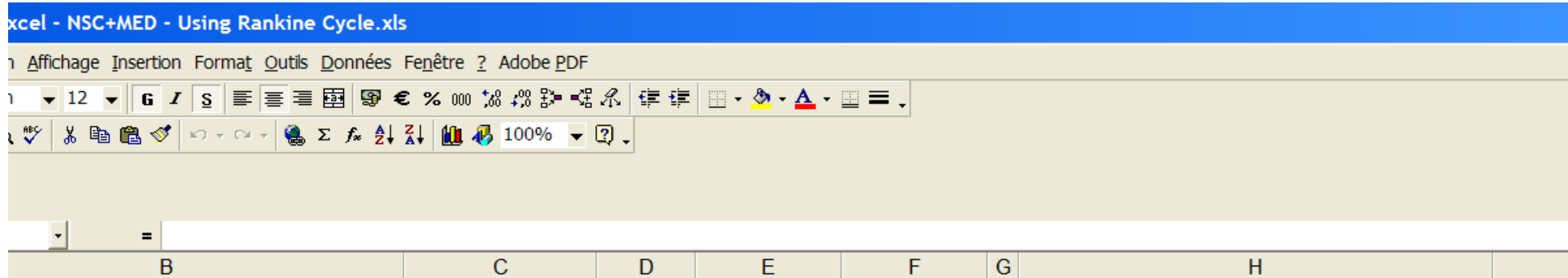
CC+RO.xls
Feuille de calcul Microsoft Excel
200 Ko

COAL+MSF.xls
Feuille de calcul Microsoft Excel
206 Ko

NSC+MED - Using Carnot Cycle.xls
Feuille de calcul Microsoft Excel
212 Ko

NSC+MED-RO - Using Rankine Cycle.xls
Feuille de calcul Microsoft Excel

NSC+MSF-RO - Using Carnot Cycle.xls
Feuille de calcul Microsoft Excel
254 Ko



THIS TEMPLATE USES RANKINE CYCLE
 DETAILS WILL BE AVAILABLE IN THE IAEA TECHNICAL TOOLKIT ON DESALINATION (CURRENTLY UNDER DEVELOPMENT)

IAEA's Desalination Economic Evaluation Programme
DEEP Version 3.2 - December 2008
Composed Case

This version is **PROTECTED**.
ONLY Cells with this background color Can be edited

GENERAL INPUT CELLS

Case identification and site characteristics

Case name	text	Case	My Case
Site name	text	Site	My Site

Performance Input

Thermal parameters input data

Annual cooling water temperature	°C	Tsw	30
Total dissolved solids (TDS)	ppm	TDS	35000

IAEA's Desalination Economic Evaluation Programme
DEEP Version 3.2 - December 2008
Nuclear Steam Cycle (PWR) Model

This version is **PROTECTED**.
ONLY Cells with this background color Can be edited

NUCLEAR STEAM CYCLE (PWR) MODEL

Case identification and site characteristics

Energy source (nuclear, fossil)	
Energy plant type	
Energy product form	
Fuel type	
Reference coupling diagram	

Performance Input

