

BOIL-ohjelmiston tuloste. Muuttujat selitetty seuraavilla sivuilla.

BOIL OUTPUT AT TIME= 125.353 MIN.  
TIME INTERVAL IS= .070 MIN.

TIME = 1.254E+02	Y = 3.037E+00	YDOT = 2.269E-02	WMASS = 1.688E+04	ALF = 8.108E-02	H2BRP = 0.
QZDRP = 0.	QCLAD = 9.910E+03	IFCR = 7.472E-03	RM = 9.131E+03	TFALL = 2.554E+02	TFE = 3.894E+02
RADT = 1.961E+05	TFPL = 1.600E+00	TSEX = 9.217E+02	FDX = 0.	QDK = 2.446E+07	QCONV = 4.790E+02
WSTN = 1.032E+01	HSTN = 3.484E+06	WZ = 7.590E-05	HZEN = 9.309E+06	TGRD1 = 5.801E+02	TGRD2 = 3.805E+02
QSTR = 1.086E+06	QFP = 0.	WTRSG = 1.026E+05	TSAT = 5.662E+02	TFDGL = 5.662E+02	PRES = 7.938E+06
WFLSH = 1.518E+01	BSLAB = 2.089E+05	FDX = 0.	FMET = 0.	TCDRE = 6.561E+02	THEAD = 5.793E+02
STEXC = 2.164E+01	HZEXC = 6.231E-05	WBRN = 1.032E+01	HLBRK = 0.	QSG = 0.	WELC = 1.484E+01
WMTOT = 1.818E+05	STM = 2.072E+03	HYD = 1.484E-02	PSV = 7.937E+06	PHV = 7.080E+02	TOTRM = 2.025E+09
VOLW = 2.510E+02	VOLS = 7.907E+01	TPW = 7.000E-01	YLID = 2.914E+00	TOTON = 4.588E+09	

  

Z	FMW(1)	XO(1)	TG(1)	TRQ(1)	TRQ(3)	TRQ(5)	TRQ(7)
3.658E-01	0.	0.	5.662E+02	5.667E+02	5.667E+02	5.667E+02	5.666E+02
7.316E-01	0.	0.	5.662E+02	5.667E+02	5.667E+02	5.667E+02	5.667E+02
1.097E+00	0.	0.	5.662E+02	5.667E+02	5.667E+02	5.667E+02	5.668E+02
1.463E+00	0.	0.	5.662E+02	5.667E+02	5.667E+02	5.667E+02	5.669E+02
1.829E+00	0.	0.	5.662E+02	5.670E+02	5.670E+02	5.669E+02	5.669E+02
2.195E+00	0.	0.	5.662E+02	5.671E+02	5.670E+02	5.669E+02	5.669E+02
2.561E+00	0.	0.	5.662E+02	5.670E+02	5.669E+02	5.669E+02	5.669E+02
2.928E+00	0.	3.421E-03	5.662E+02	6.461E+02	6.379E+02	6.319E+02	6.287E+02
3.292E+00	0.	3.441E-03	5.662E+02	1.128E+03	1.070E+03	1.023E+03	9.976E+02
3.658E+00	0.	3.318E-03	1.050E+03	1.125E+03	1.064E+03	1.015E+03	9.879E+02

  

GAST	STRT	MIXEN	STWEN	HZENI
9.140E+02		3.484E+06	3.484E+06	9.300E+06
9.099E+02		3.475E+06	3.475E+06	9.239E+06
8.658E+02		3.378E+06	3.378E+06	8.585E+06
2.554E+02		0.	0.	0.

  

WTSGIN = 5.7802E+03	WPCST = 1.8842E+06	WAFW = 0.	WTRSG = 4.8521E+10
S6DMS = 0.	S6CON = 0.	W6COUT = 0.	

## BOIL-muuttujien määritelmät.

\* \* \* BOIL OUTPUT \* \* \*

ALF VOID FRACTION IN LEVEL SWELL MODEL AT TOP OF CORE

CRF(CI) FRACTION OF GROUP I FISSION PRODUCTS RELEASED (I = 1,2,...,7  
IS THE CORRAL GROUP STRUCTURE)

DMS MASS TIMES THE HEAT CAPACITY OF THE CORE MATERIAL THAT  
SLUMPED INTO BOTTOM HEAD IN CURRENT TIME STEP, BTU/F (J/K)

DWTR MASS OF WATER CONDENSED BY METAL-WATER REACTION IN BOTTOM HEAD, LB

FALL MASS TIMES THE HEAT CAPACITY OF THE CORE MATERIAL SLUMPED  
INTO BOTTOM HEAD, BTU/F (J/K)

FCM FRACTION OF CORE MELTED

FCRH FRACTION CLADDING REATED IN BOTTOM HEAD

FCRO OLD FRACTION CLADDING REACTED IN BOTTOM HEAD

FMET FRACTION OF DECAY HEAT ASSOCIATED WITH METAL PHASE

FNM(CR) FRACTION NODE MELTED IN RADIAL ZONE R

FOX FRACTION OF DECAY HEAT ASSOCIATED WITH OXIDE PHASE

FZX FRACTION OF CORE MELTED (SAME AS FCM)

GAST GAS TEMPERATURE IN UPPER PLENUM(GAST(1)) AND ISTR STRUCTURES,F (K)  
 HSTM STEAM ENTHALPY AT THE CORE EXIT, BTU/LB (J/KG)  
 HYD HYDROGEN MASS IN VESSEL, LB (KG)  
 H2DRP HYDROGEN PRODUCED FROM METAL-WATER REACTION IN BOTTOM HEAD  
 / LB/MIN (KG/S)  
 H2EN HYDROGEN ENTHALPY AT THE CORE EXIT, BTU/LB (J/KG)  
 H2ENI HYDROGEN ENTHALPY CORRESPONDING TO GAST, BTU/LB (J/KG)  
 H2EXC HYDROGEN PRODUCED IN METAL-WATER REACTIONS IN CORE AND  
 BOTTOM HEAD, LB/MIN (KG/S)  
 M = 1 WHEN WATER LEVEL IN VESSEL DROPS BELOW GRID1 ELEVATION,  
 = 2 WHEN GRID1 FAILS, =3 WHEN GRID1 HAS FAILED AND  
 TEMPERATURE OF STRUCTURES IN BOTTOM HEAD IS ABOVE WATER  
 TEMPERATURE  
 MIXEN MIXED GAS ENTHALPY CORRESPONDING TO GAST, BTU/LB (J/KG)  
 MM = 0 INITIALLY, =3 IF CORE HAS COLLAPSED, BOTTOM HEAD  
 IS DRY AND ECC IS STOPPED  
 PRES PRIMARY SYSTEM PRESSURE, PSIA (PA)  
 PHV PARTIAL PRESSURE OF HYDROGEN IN PRESSURE VESSEL, PSIA (PA)

PSV PARTIAL PRESSURE OF STEAM IN PRESSURE VESSEL, PSIA (PA)

PVSLO OLD VESSEL PRESSURE, PSIA (PA)

QCLAD POWER GENERATED FROM ZR-H2O REACTIONS CORRECTED FOR ENTHALPY  
 CHANGES DUE TO DIFFERENT TEMPERATURES OF PRODUCTS AND  
 REACTANTS, BTU/HR (W)

QCONV HEAT TRANSFER FROM THE FUEL BY CONVECTION TO WATER AND  
 STEAM, BTU/HR (W)

QDK CORE DECAY HEAT, BTU/HR (W)

QF(I) FRACTION OF DECAY HEAT IN GROUP I BEFORE FISSION PRODUCT  
 RELEASE (I = 1,2,...,7 IS THE CORRAL GROUP STRUCTURE)

QFP FISSION PRODUCT HEAT CARRIED OUT OF THE CORE BY GASS FLOW  
 , BTU/HR (W)

QMW HEAT GENERATED FROM ZR-H2O REACTIONS, BTU/HR (W)

QSLAB HEAT TRANSFER FROM METAL STRUCTURES TO THE VESSEL WATER  
 , BTU/HR (W)

QSG HEAT TRANSFERED TO STEAM GENERATOR, BTU/HR (W)

QSTR HEAT TRANSFERED TO THE ISTR STRUCTURES IN THE EXIT GAS  
 STREAM, BTU/HR (W)

QZDRP POWER PRODUCED FROM THE METAL-WATER REACTION IN THE BOTTOM  
HEAD, BTU/HR (W)

RADT HEAT RADIATED TO THE FIRST GRID PLATE ABOVE CORE, BTU/HR (W)

SGCON TOTAL INTEGRATED MASS OF STEAM CONDENSED IN THE PRIMARY  
SIDE OF THE STEAM GENERATOR, LB (KG)

SGDWS STEAM CONDENSATION RATE IN THE PRIMARY SIDE OF THE STEAM  
GENERATOR, LB/MIN (KG/S)

STEXC STEAM GOING INTO UPPER PLENUM, LB/MIN (KG/S) (PRODUCTION  
MINUS CONSUMPTION IN METAL-WATER REACTION)

STM STEAM MASS IN PRESSURE VESSEL, LB (KG)

STMEN STEAM ENTHALPY CORRESPONDING TO GAST, BTU/LB J/KG)

STRT TEMPERATURE OF ISTR STRUCTURES, F (K)

TCORE AVERAGE TEMPERATURE OF THE UNMELTED CORE NODES, F (K)

TDROP TEMPERATURE OF THE DEBRIS THAT FELL INTO BOTTOM HEAD DURING  
CURRENT TIME STEP, F (K)

TFALL EQUIVALENT TEMPERATURE OF CORE MATERIAL IN BOTTOM HEAD

(ACTUAL TEMPERATURE PLUS EQUIVALENT TEMPERATURE RISE DUE

TO HEAT OF FUSION), F (K)

TFGR FRACTION OF CLAD REACTED

TFE TEMPERATURE OF THE FIRST GRID PLATE ABOVE CORE, F (K)

TFPL FRACTION OF FISSION PRODUCTS NOT RELEASED

TG(R) STEAM TEMPERATURE IN RADIAL ZONE R, F (K)

TGEX GAS TEMPERATURE AT CORE EXIT, F (K)

TGRID1 TEMPERATURE OF THE FIRST GRID PLATE BELOW THE CORE, F (K)

TGRID2 TEMPERATURE OF THE SECOND GRID PLATE BELOW THE CORE, F (K)

THEAD TEMPERATURE OF THE BOTTOM HEAD, F (K)

TIME ACCIDENT TIME, MIN (MIN)

TOTMW TOTAL ENERGY GENERATED FROM METAL-WATER REACTION, BTU (J)

TOTQN TOTAL CHANGE IN CORE STORED HEAT, BTU (J)

TOTQSG TOTAL ENERGY LOST TO STEAM GENERATOR, BTU (J)

TPM TWO PHASE FLOW MULTIPLIER

TPOOL TEMPERATURE OF THE WATER IN THE REACTOR VESSEL, F (K)

TRO(R) FUEL ROD TEMPERATURE IN THE RADIAL ZONE R, F (K)

TSAT	WATER SATURATION TEMPERATURE AT SYSTEM PRESSURE (PRES), F (K)
VOLS	VOLUME OF STEAM IN PRIMARY, FT3 (M3)
VOLW	VOLUME OF WATER IN PRIMARY, FT (M3)
WAFW	FEEDWATER FLOW RATE TO STEAM GENERATOR, LB/MIN (KG/S)
WCST	MASS OF WATER IN CONDENSATE STORAGE TANK, LB (KG)
WECC	ECC FLOW RATE INTO REACTOR VESSEL, LB/MIN (KG/S)
WFLSH	STEAM PRODUCED BY FLASHING FOR DECREASING SYSTEM PRESSURE TRANSIENTS, LB/MIN (KG/S)
WH2	HYDROGEN MASS FLOW RATE AT THE CORE EXIT, LB/MIN (KG/S)
WLBRK	MASS FLOW RATE OF WATER COMING OUT OF THE PRIMARY SYSTEM BREAK AREA, LB/MIN (KG/S)
WMASS	MASS OF WATER ABOVE THE BOTTOM OF THE CORE, LB (KG)
WMTOT	TOTAL WATER MASS IN VESSEL, LB (KG)
WNT	TOTAL STEAM GENERATION RATE, LB/MIN (KG/S)
WSBRK	MASS FLOW RATE OF STEAM COMING OUT OF THE PRIMARY SYSTEM BREAK AREA, LB/MIN (KG/S)
WSGOUT	BOIL OFF RATE OF STEAM GENERATOR SECONDARY WATER

/ LB/MIN (KG/S)  
 WSTM TOTAL MASS FLOW RATE OF STEAM LEAKING AND VENTING FROM  
 PRIMARY SYSTEM, LB/MIN (KG/S)  
 WTRSG WEIGHT OF WATER IN THE STEAM GENERATOR SECONDARY, LB (KG)  
 WTSGIN INTEGRATED FEEDWATER FLOW INTO STEAM GENERATOR SECONDARY  
 / LB (KG)  
 XO(R) THICKNESS OF CLAD REACTED IN THE RADIAL ZONE R, FT (M)  
 Y STEAM-WATER MIXTURE LEVEL IN VESSEL, FT (M)  
 YLIQ COLLAPSED LIQUID LEVEL, FT (M)  
 YTOT RATE OF CHANGE OF STEAM-WATER MIXTURE LEVEL IN REACTOR  
 VESSEL, FT/MIN (M/S)  
 Z DISTANCE FROM BOTTOM OF CORE, FT (M)