This is the output expected when you compile and link the TQ1-crfe program aned execute it for two different temperatures

```
C:\Users\..\TQ4lib\F90\test1>linktest1

C:\Users\..\TQ4lib\F90\test1>REM command file to cretate test program 1 for OCASI/TQ
C:\Users\..\TQ4lib\F90\test1>REM Either execute the commands below interactivly or

C:\Users\..\TQ4lib\F90\test1>REM rename this file with extention .cmd and execute it as a b
C:\Users\..\TQ4lib\F90\test1>REM YOU MUST HAVE COMPILED AND LINKED THE MAIN OC PROGRAM

C:\Users\..\TQ4lib\F90\test1>REM The copy commands assume you are on the directory TQ4lib/F
C:\Users\..\TQ4lib\F90\test1>REM and have the main program three directories up
C:\Users\..\TQ4lib\F90\test1>REM as when you downloaded the zip file with the program

C:\Users\..\TQ4lib\F90\test1>copy ..\..\..\liboceq.a .
        1 fil(er) kopierad(e).
C:\Users\..\TQ4lib\F90\test1>copy ..\..\..\liboceqplus.mod .
        1 fil(er) kopierad(e).
C:\Users\..\TQ4lib\F90\test1>copy ..\..\liboctq.F90 .
        1 fil(er) kopierad(e).
C:\Users\..\TQ4lib\F90\test1>gfortran -c liboctq.F90
C:\Users\..\TQ4lib\F90\test1>gfortran -o tqex1 TQ1-crfe.F90 lib
octq.o liboceq.a
C:\Users\..\TQ4lib\F90\test1>tqex1
 tqini created: DEFAULT_EQUILIBRIUM

System with  2 elements: CR, FE,
and   4 phases: LIQUID, BCC_A2, FCC_A1, SIGMA,

Give conditions:
Temperature: /800/:
Pressure: /100000/:
Mole fraction of CR: /0.25/:
 3Y Composition set(s) created:            1
3Y Gridmin:      32 points   0.00E+00 s and       0 clockcycles, T=  800.00
Phase change: its/add/remove:     5    0    2
Phase change: its/add/remove:    10    4    0
Equilibrium calculation   19 its,   0.0000E+00 s and       0 clockcycles
3Y move results from tuplet    5 to    2
3Y Removing unstable phase tuple(s)    6

Successful calculation
```

```
Amount of  4 phases:  0.0000 0.8302 0.0000 0.1698

Stable phase: BCC_A2, amount:   8.3018E-01, mole fractions:
CR      :  0.197577,  FE      :  0.802423,

Stable phase: SIGMA, amount:   1.6982E-01, mole fractions:
CR      :  0.506278,  FE      :  0.493722,

Component, mole fraction and chemical potential
CR            0.250000           -2.716211E+04
FE            0.750000           -3.089767E+04

********************
Start debug output from TQLR:
  1:T=800, 2:P=100000, 3:N=1, 4:X(CR)=0.25
 Degrees of freedom are   0
T=    800.00 K (   526.85 C), P=  1.0000E+05 Pa, V=  6.6465E-06 m3
N=   1.0000E+00 moles, B=   5.4884E+01 g, RT=   6.6516E+03 J/mol
G= -2.9964E+04 J, G/N= -2.9964E+04 J/mol, H=  1.9289E+04 J, S=  6.1566E+01 J/K
Component name    Moles      Mole-fr  Chem.pot/RT  Activities  Ref.state
CR                2.5000E-01  0.25000 -4.0835E+00  1.6848E-02  SER (default)
FE                7.5000E-01  0.75000 -4.6451E+00  9.6082E-03  SER (default)

Name                Status Moles      Volume    Form.Units  At/FU dGm/RT  Comp:
BCC_A2.................. E  8.302E-01  6.02E-06  8.30E-01    1.00  0.00E+00  X:
 FE     8.02423E-01  CR     1.97577E-01

SIGMA................... E  1.698E-01  6.23E-07  5.66E-03   30.00  0.00E+00  X:
 CR     5.06278E-01  FE     4.93722E-01

End debug output from TQLR
********************


Any more calculations? /N/: y

Give conditions:
Temperature: /800/: 600
Pressure: /100000/:
Mole fraction of CR: /0.25/:
 3Y Composition set(s) created:            1
3Y Gridmin:      32 points   0.00E+00 s and       0 clockcycles, T=  600.00
Equilibrium calculation   15 its,   0.0000E+00 s and       0 clockcycles
```

```
Successful calculation

Amount of  5 phases:  0.0000 0.2157 0.0000 0.0000 0.7843

Stable phase: BCC_A2, amount:   2.1567E-01, mole fractions:
CR      :  0.970535,  FE      :  0.029465,

Stable phase: BCC_A2_AUTO#2, amount:   7.8433E-01, mole fractions:
CR      :  0.051867,  FE      :  0.948133,

Component, mole fraction and chemical potential
CR            0.250000           -1.718694E+04
FE            0.750000           -1.975398E+04

********************
Start debug output from TQLR:
  1:T=600, 2:P=100000, 3:N=1, 4:X(CR)=0.25
 Degrees of freedom are   0
T=    600.00 K (   326.85 C), P=  1.0000E+05 Pa, V=  7.2044E-06 m3
N=   1.0000E+00 moles, B=   5.4884E+01 g, RT=   4.9887E+03 J/mol
G= -1.9112E+04 J, G/N= -1.9112E+04 J/mol, H=  9.3417E+03 J, S=  4.7423E+01 J/K
Component name    Moles      Mole-fr  Chem.pot/RT  Activities  Ref.state
CR                2.5000E-01  0.25000 -3.4452E+00  3.1899E-02  SER (default)
FE                7.5000E-01  0.75000 -3.9597E+00  1.9068E-02  SER (default)

Name                Status Moles      Volume    Form.Units  At/FU dGm/RT  Comp:
BCC_A2.................. E  2.157E-01  1.57E-06  2.16E-01    1.00  0.00E+00  X:
 CR     9.70535E-01  FE     2.94648E-02

BCC_A2_AUTO#2........... E  7.843E-01  5.63E-06  7.84E-01    1.00  0.00E+00  X:
 FE     9.48133E-01  CR     5.18667E-02

End debug output from TQLR
********************


Any more calculations? /N/:

 Auf wiedersehen

C:\Users\..\TQ4lib\F90\test1>
```