EUROPEAN COMMISSION
5th EURATOM FRAMEWORK PROGRAMME 1998-2002
KEY ACTION : NUCLEAR FISSION

HTR-M

European Project for the development of HTR Technology - Materials for the HTR

CONTRACT N°
FIKI-CT-2000-00032

HTR-M Work Package 3 on Graphite - details of programme

by

D.E.Buckthorpe

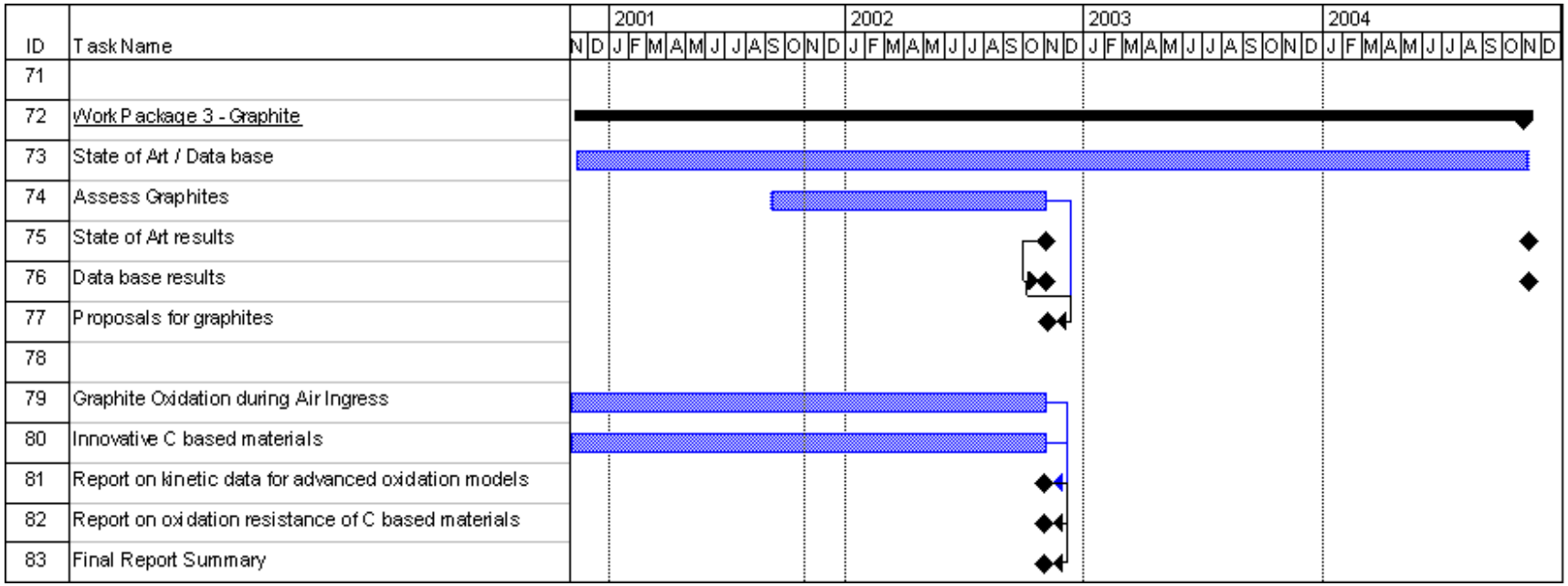
NNC Ltd.

UK

Dissemination level : CO

Document Number: HTR-M-01/10-D-3.0.20

HTR-M Work Package 3 - on Graphite - Details of Programme -



Activities

73: **State of Art / Data Base:** **(NNC) - FZJ CEA** **D. E.Buckthorpe / M. Davies; G.Haag**

Limited review of available Graphite data from available published data / IAEA data base / National data
Set up / provide data for insertion in data base as available.

74: **Assess Graphites** **(NNC) FZJ FRA CEA** **M. Davies G. Haag B. Riou**

Assess available graphites and make recommendations for future HTR applications -
(to be done in conjunction with HTR-M1 graphite irradiation tests)

75: **State of Art Results** - **(NNC), FZJ, CEA**
76: **Data Base Results:** **(NNC), FZJ, CEA**
77: **Proposals for graphites** **(NNC) FZJ, FRA, CEA, NRG**

79: **Graphite Oxidation under Air Ingress** **(FZJ)** **R. Moormann**

Perform tests on the thermogravimetric rig THERA in air and steam to determine effective diffusion coefficients. Tests performed on A3-27 (HTR fuel graphite) and V483T (Structural graphite)

80: **Innovative Carbon Based Materials** **(FZJ)** **R. Moormann**

Perform tests on thermogravimetric rig THERA, induction furnace INDEX in air / oxygen / steam to determine oxidation resistance. Tests performed on NS31 (3D CFC with approx. 10% Si); NB31 (as NS31 but without Si); AO5 (2D CFC).
Thermal conductivity tests of non-irradiated and irradiated CFC material (PARIDE 3 & PARIDE 4)

81: **Kinetic data for advanced oxidation models** - **(FZJ)**
82: **Oxidation resistance of C based materials** - **(FZJ)**
83: **Final Report summary** **(FZJ), NNC**

Current Status - 2001

	Task	Detailed description	Partner
NNC (5) FZJ (5) CEA (2) FRA (2)	1. Material Review & Date Base	**Review state of the art** (to cover understanding on material property requirements for design and their derivation, production, etc.)	**NNC FZJ CEA**
		Data Base (collate and assemble available information from sources into a form that can be used as a data base)	**NNC FZJ CEA**
		Assess Graphites (From information available assess suitability of present day graphites)	**NNC FZJ CEA FRA**
FZJ (16)	2. Oxidation Tests	**Generation of Kinetic data** (required for advanced oxidation Uses the THERA Facility at FZJ)	**FZJ**
		Resistance of innovative C-Based materials (from Fusion experience, uses THERA & INDEX (Induction furnace)	**FZJ**
		Thermal behaviour of innov. C-Based materials (from Fusion experience, uses THERA index (Induction furnace)	**FZJ**