



TRANSCO. PRODUCTS INC.
EXECUTIVE OFFICES

Fifty Five East Jackson Boulevard

Suite 2100

Chicago, Illinois 60604-4166

312-427-2818

Facsimile 312-427-4975

ROBERT M. GOSS
PRESIDENT

February 16, 1994

Mr. Conrad E. McCracken
Chief
Plant Systems Branch
Division of Systems Safety and Analysis
Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

Dear Conrad,

On the behalf of Transco Products Inc. and Darchem Engineering Inc. we would like to invite you or one of your associates to witness our March 2, 1994 testing of the Darmatt cable wrap protection system.

We will be performing a three hour cable tray and conduit test at the Favordale Technology Center in Darlington, England. The purpose of the testing is to begin qualification of a replacement product used in cable tray and conduit protection. This test will follow the guidelines described in GL 86-10 and its supplements. Testing will also be witnessed by Steve Hoffman of Underwriters Laboratories. Additional information such as test description and themocouples will be provided upon request.

We would be pleased to provide any assistance required in making airplane, car or hotel arrangements.

If you require any further information or have any questions feel free to contact us.

Sincerely,

Robert M. Goss
Writer's Extension 121

RMG/lc

9403070291 940216
PDR ORG NRRB
PDR

040063

To: US Utilities/Nuclear Power Plants

**DARCHEM / TRANSCO ARE HERE TO HELP YOU FIND
SOLUTIONS FOR YOUR CABLE-TRAY
FIRE PROTECTION PROBLEMS**

Engineering Services

Darchem has been closely involved with the nuclear industry for over 30 years, during which time it has developed an extensive engineering capability to solve customer problems through engineering, development, testing, manufacturing and installation under strong project management and in compliance with international quality standards. Services associated with nuclear fire protection include:

- Identification and analysis of site requirements
- Liaison with regulatory authorities to ensure conformance

Fire Test Capability

Darchem has an internationally recognized fire testing and certification capability which is:

- Compliant with US standards
- UL witnessed and certified testing
- Price Competitive
- Fast turn round times
- Customized testing

Cable-Tray Fire Protection

Darchem has developed a nuclear-grade flexible fire protection system for fire protection of cable trays and other safety-critical electrical equipment. In cooperation with Transco Products Inc, of Chicago, this product is now being marketed to the US Nuclear Industry.

The Companies

Darchem Engineering, based in the North East of England and Pasadena, California, is part of the Weir Group PLC (Annual Sales \$700m).

Darchem has specialized in the design and supply of heat shields for primary circuit equipment for the last 30 years, during which time contracts on over 100 nuclear reactors have been performed in 14 countries. In 1987, Darchem acquired a Pasadena business involved in the fire protection of cable trays and electrical equipment associated with emergency shut-down systems. Trading since 1987 as Darchem Engineering Inc, this business has established a strong reputation in the petrochemical industry and has developed a capability in the nuclear industry with the design and test support of Darchem in England.

Since 1936, Transco Inc has been servicing the power generation industry with a variety of services and manufactured products. Transco Products Inc, a Chicago-based wholly-owned subsidiary of Transco Inc, has specialized in thermal and fire protection products for the nuclear power industry for over 30 years. With insulation and fire technologies in use at over 200 operating nuclear power reactors in 15 countries, Transco Products Inc, has the experience necessary to meet the stringent requirements of nuclear power applications.

A comprehensive range of services is available through Darchem in association with Transco:

- Plant surveys
- Custom design
- System testing and certification
- Custom manufacture
- Removal of existing materials
- Installation of the new system
- Liaison with regulatory authorities to ensure conformance

Darchem Engineering Ltd
Stillington
Stockton on Tees
Cleveland
TS21 1LB
England

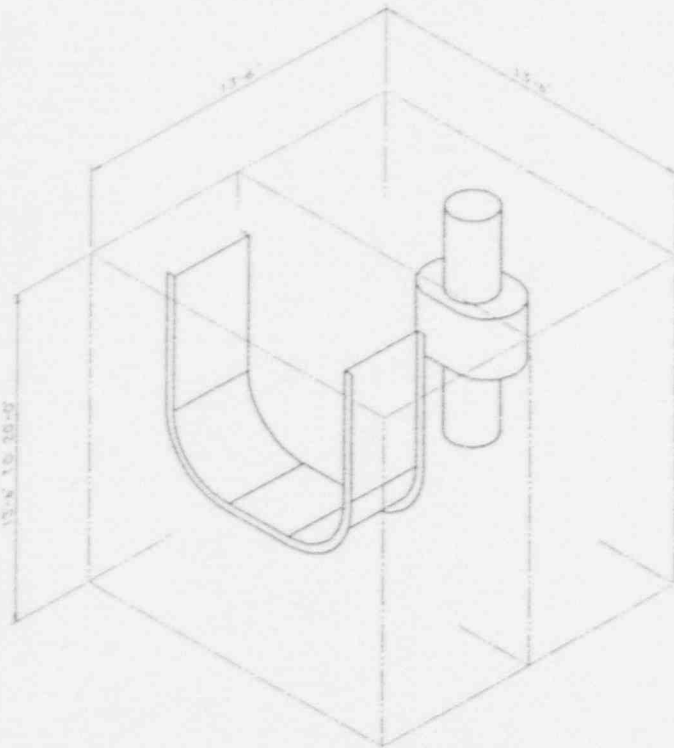
Darchem Engineering Inc
81 West Bellevue Drive
Pasadena
CA 91105
USA

US Sales Representative

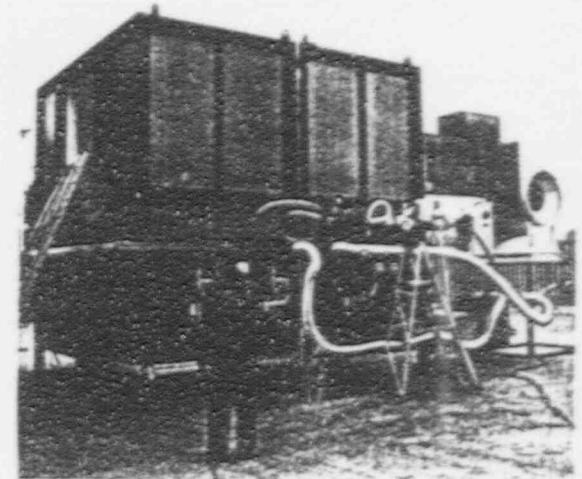
Transco Products Inc
Fifty Five East Jackson Boulevard
Suite 2100
Chicago
Illinois 60604-4166
USA
TEL: 312 427 2818
FAX: 312 427 4975

CONTACT: Kevin Hawks

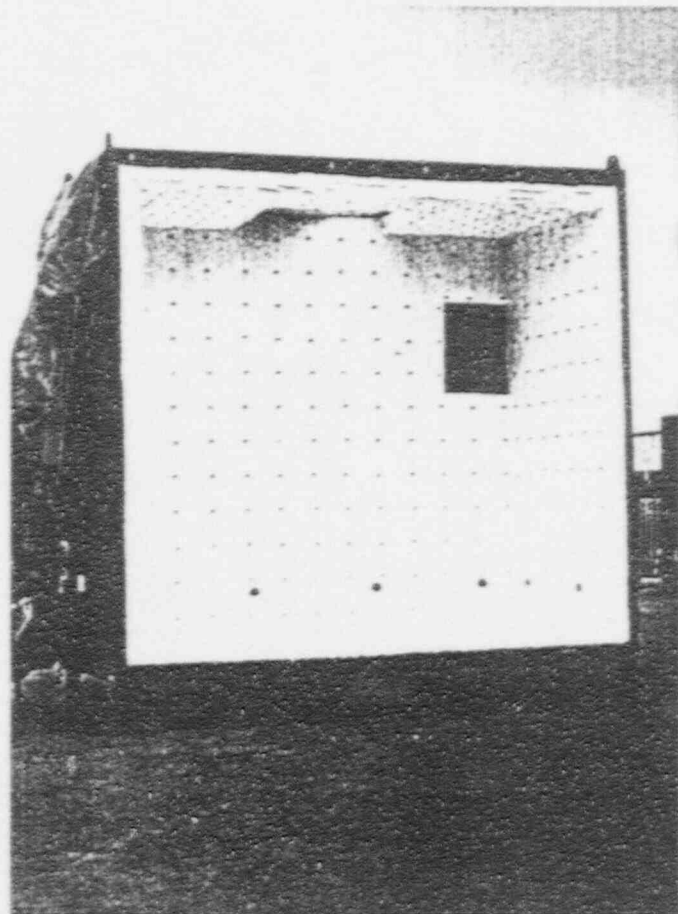
2500 ft³ ENCLOSED FURNACE



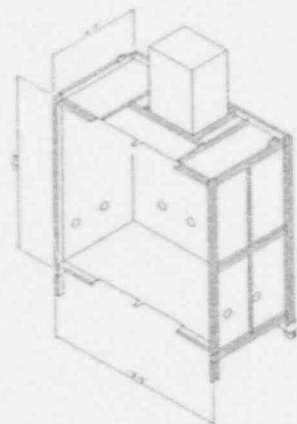
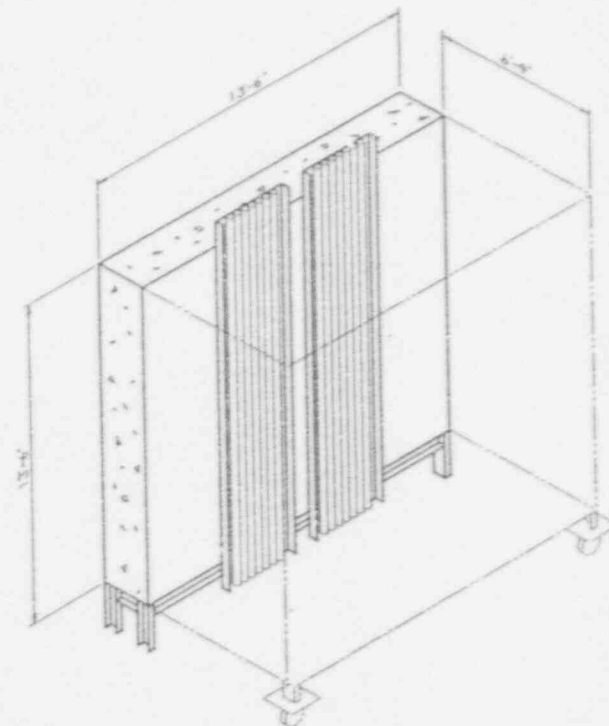
- * 13'-6" x 13'-6" x 13'-6"
- * Extendable to 20 ft high
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2200°F (1200°C)
- * Penetrations on any face to suit customer requirements
- * Thermal capacity of 20 million BThu's



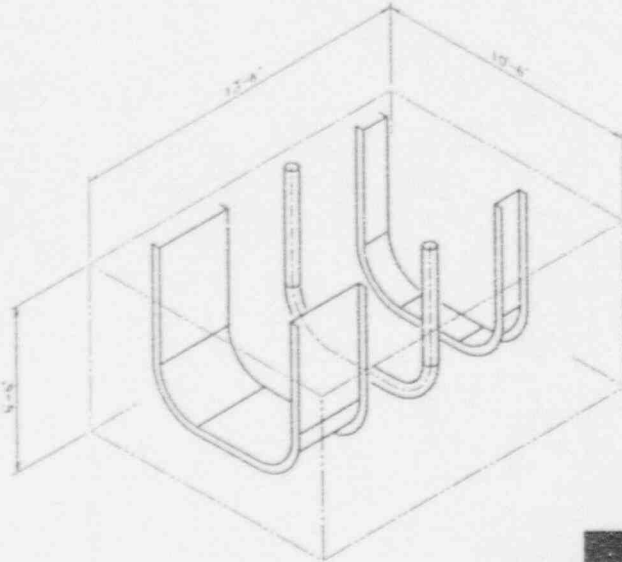
1250 ft³ OPEN FACE FURNACE



- * 13'- 6" x 13'- 6" x 6'- 9"(deep)
- * Extendable to 20 ft high
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2200°F (1200°C)
- * Penetrations to suit customer requirements
- * Testing of systems mounted on vertical walls

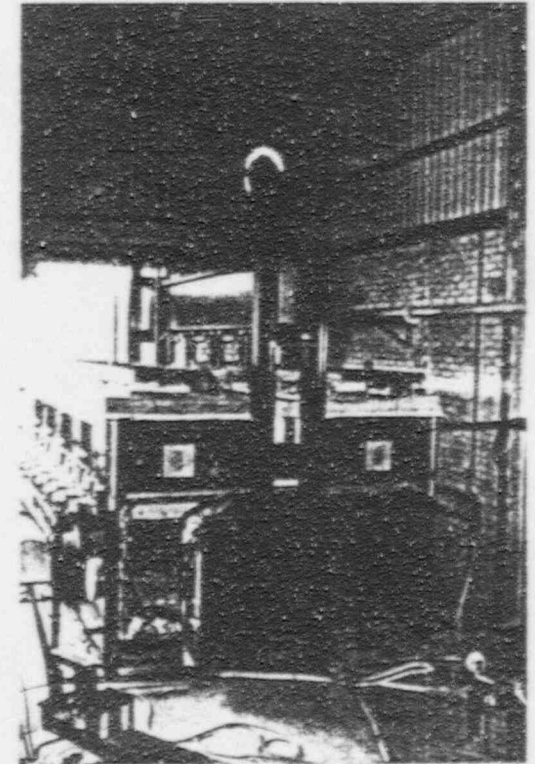
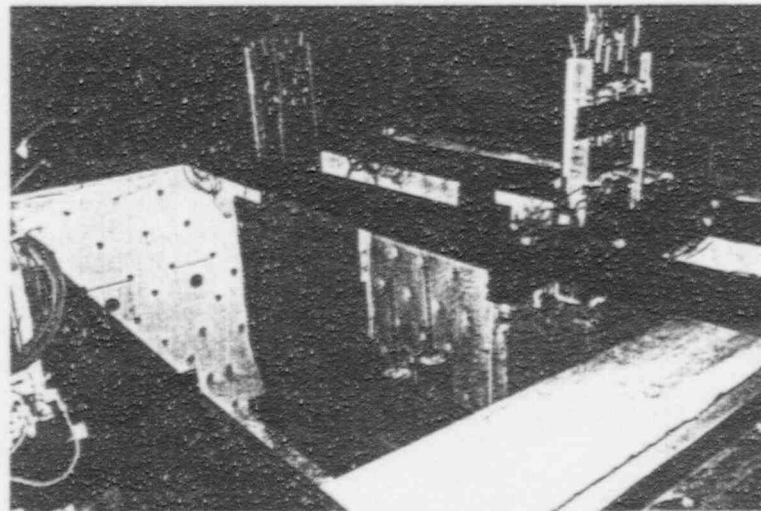


A WEIR Group Company



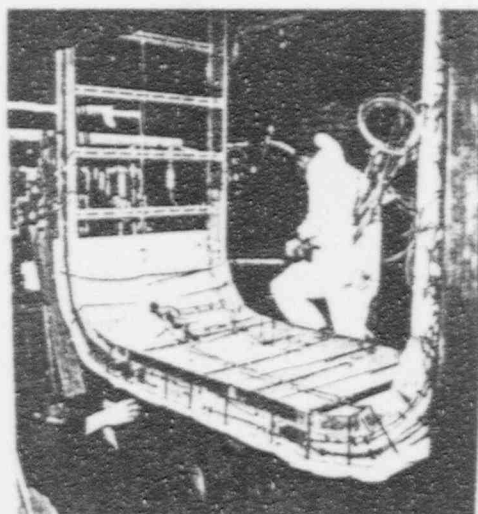
900 ft³ ENCLOSED FURNACE

- * 6' - 6" (high) x 13' - 6" x 10' - 6"
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2200°F (1200°C)
- * Testing of systems mounted on horizontal floor
- * Penetrations in roof to suit customer requirements

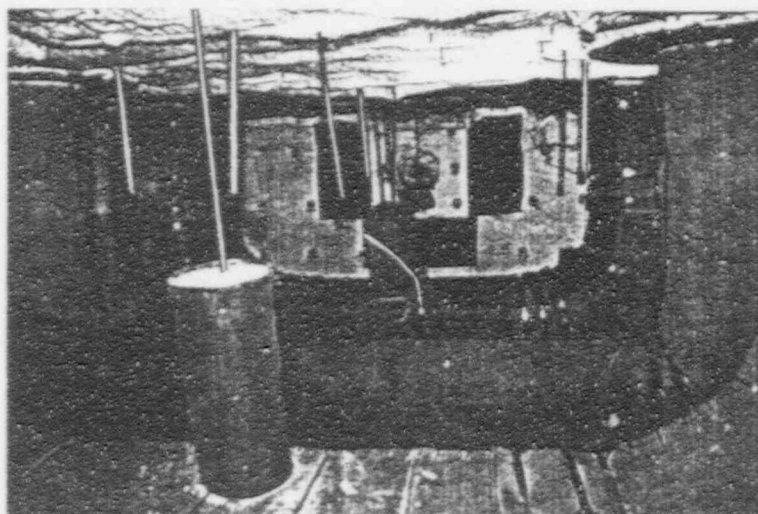
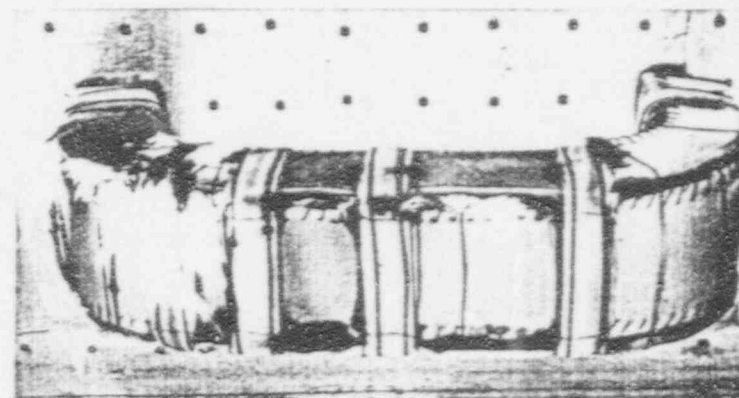


A WEIR Group Company

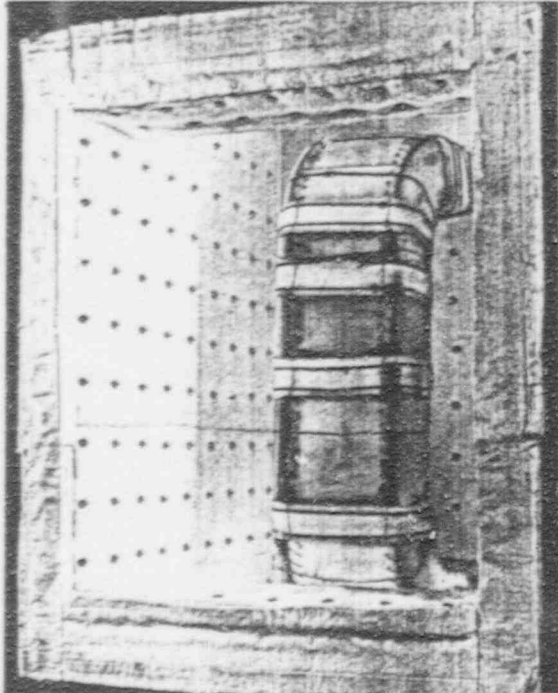
CABLE TRAY TESTING (IN 900 ft³ ENCLOSED FURNACE)



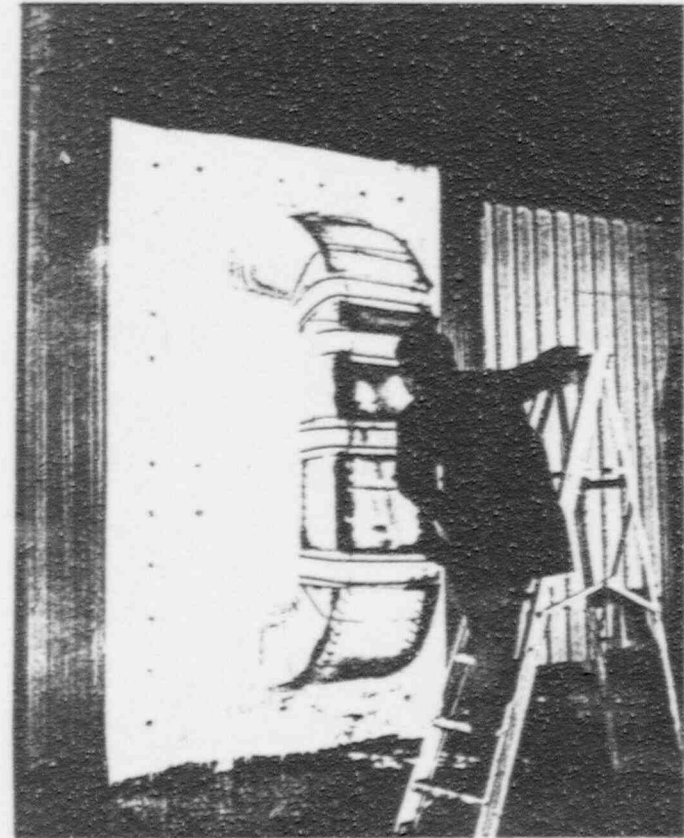
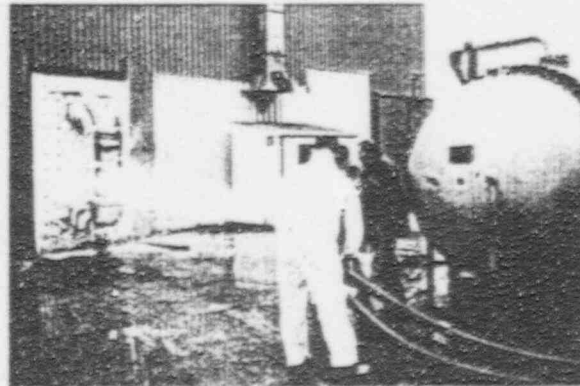
- * 3 hour test to UL 1724 and ASTM E119
- * 36" and 12" cable trays, including tray support, under test
- * Cold side thermocouples configured to NRC requirements

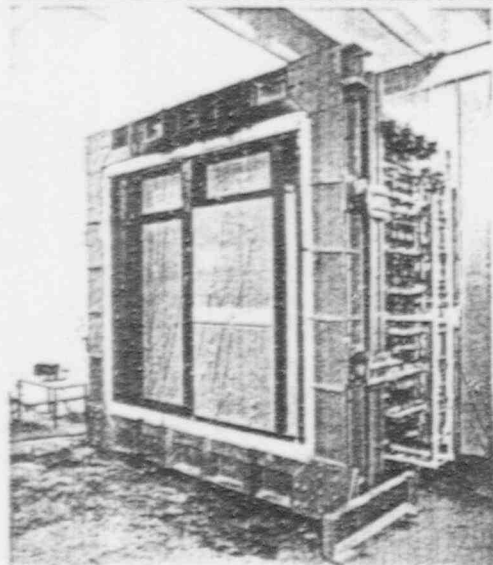


HOSE STREAM TESTING



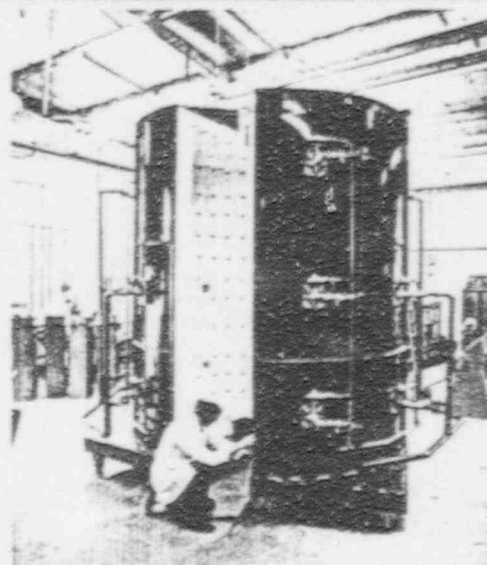
- * Testing to US Federal Register Vol 58 No. 140
- * Test sample exposed to 3hr ASTM E119 fire curve
- * Furnace configured to suit customer requirement
- * Furnace removed leaving test sample fixed in position
- * Hose streams applied to meet ASTM E119 and NRC requirements





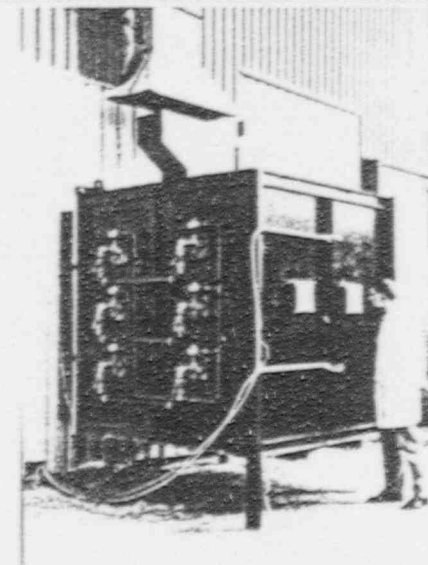
300 ft³ OPEN FACE FURNACE

- * 10'-0" x 10'-0" x 3'-0" (deep)
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2150°F
- * Testing of walls and wall mounted systems



330 ft³ CIRCULAR ENCLOSED FURNACE

- * 6' - 6" diameter x 10'-0" high
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2150°F
- * Testing of vertically loaded structures (compressive or tensile to 150 tons)



125 ft³ OPEN FACE FURNACE

- * 5'-0" x 5'-0" x 5'-0"
- * Meets requirements of ASTM E119 and UL 1709 fire curves
- * Maximum temperature 2200°F
- * Testing of walls and wall mounted systems

NUCLEAR GRADE DARMATT CERTIFICATION TESTS

- * UL witnessed and certified testing
- * Fire testing to UL 1724 and ASTM E119
- * Hose stream to US Federal Register Vol 58, No. 140
- * Ampacity Derating based on UL 1712
- * Ageing – ASTM E1027
- * Combustibility – ASTM E136
- * Oxygen Consumption Combustibility – ASTM E 1354
- * Corrosibility – US Reg. 1.36
- * Surface spread of flame – ASTM E84
- * UV Resistance

Darchem Engineering Ltd

Stillington, Stockton-on-Tees, Cleveland TS21 1LB England
 Telephone: 0740 630461 Facsimile: 0740 630529 Telex: 58549



DARCHEM

ENGINEERING

World wide nuclear power stations for which Darchem Engineering Ltd has supplied, or received orders to supply, special purpose insulation.

Country	Reactor type				
Belgium	Pressurised water reactors	Doel III	Doel IV		
		Tihange II	Tihange III		
China	Pressurised water reactors	Guangdong 1			
		Guangdong 2			
Finland	Boiling water reactors	TVO1			
		TVO2			
France	Gas cooled reactors	St Laurent I			
		St Laurent II			
	Sodium cooled fast reactors	Rapsodie			
		Phenix			
	Pressurised water reactors	Fessenheim 1	Le Blayais B1	Chinon 3	
		Fessenheim 2	St Laurent B2	Chinon 4	
		Tricastin I	Le Blayais B2	St Alban 1	
		Gravelines 1	Chinon 1	Flamanville 1	
		Dampierre 1	Le Blayais B3	Cattenom 1	
		Tricastin II	Chinon 2	Cattenom 2	
		Gravelines 2	Le Blayais B4	Cattenom 3	
		Dampierre II	Paluel 1	Cattenom 4	
		Tricastin III	Paluel 3	St Alban II	
		Gravelines 3	Cruas 1	Flamanville 2	
		Dampierre III	Cruas 2	Golfech 1	
		Tricastin IV	Cruas 3	Golfech 2	
		St Laurent B1	Cruas 4	Belleville 2	
		Gravelines 4	Gravelines 5	Nogent 2	
		Dampierre IV	Gravelines 6		
Germany		THTR Helium cooled reactor	Schmehausen		
	Pressurised water reactors	Udenwaser	Neckarwestheim		
		Biblis B			
Boiling water reactors	Gundremmingen B				
	Gundremmingen C				
Holland	Pressurised water reactor	Borssele			
Iran	Pressurised water reactors	Bushehr 1			
		Bushehr 2			
Italy	Gas cooled reactor	Latina			
Japan	Gas cooled reactor	Tokai-Mura			
Korea	Pressurised water reactors	Kori 1	Uljin 1		
			Uljin 2		
South Africa	Pressurised water reactors	Koeberg 1			
		Koeberg 2			
Spain	Gas cooled reactor	Vandellós			
Sweden	Pressurised water reactors	Ringhals II	Ringhals IV		
		Ringhals III			
	Boiling water reactors	Forsmark 1	Oskarshamn 1	Barseback 1	
		Forsmark 2	Oskarshamn 2	Barseback 2	
		Forsmark 3	Oskarshamn 3	Ringhals I	
	Switzerland	Pressurised water reactor	Goesgen		
United Kingdom	Gas cooled reactors	Trawstynydd	Oldbury		
		Dungeness A	Wylfa		
	Advanced gas cooled reactors	Windscale	Hinkley B		
		Dungeness B	Hunterston B		
		Hartlepool	Heysham II		
	Sodium cooled fast reactor	Heysham	Torness		
Dounreay					
Pressurised water reactors	Marine (19)	Sizewell B			

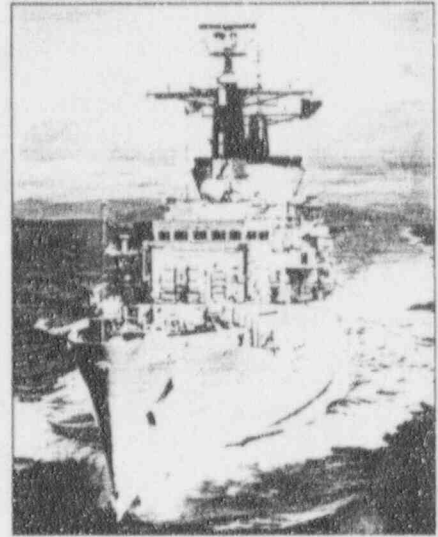
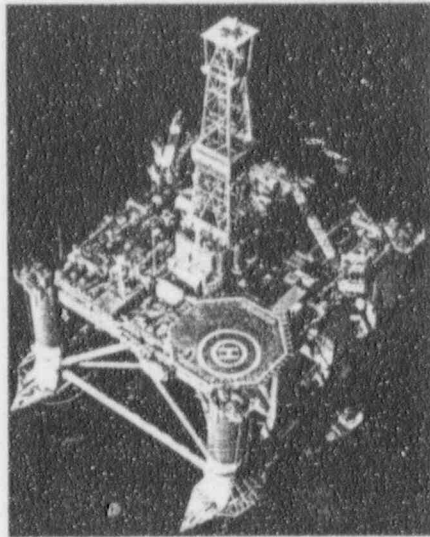
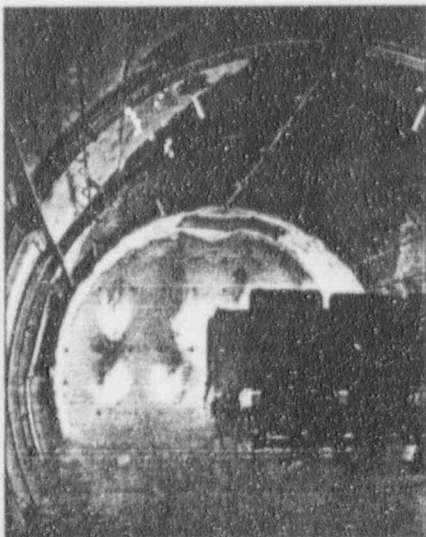
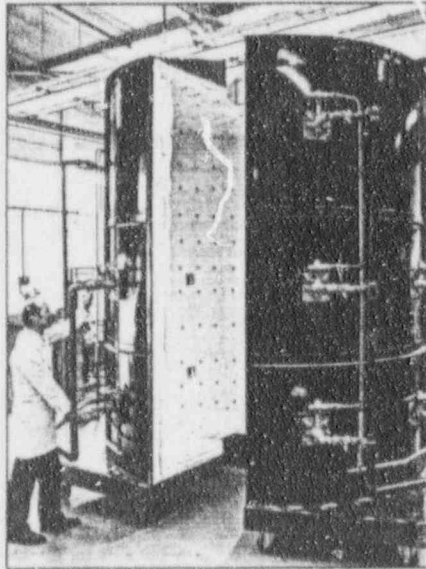
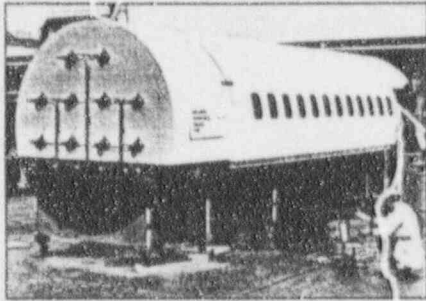
Test Facilities

Faverdale Technology Centre Ltd
Faverdale Industrial Estate
Darlington Co Durham DL3 0QL
Telephony : 0325 381220
Facsimile 0325 381218



FAVERDALE

TECHNOLOGY
CENTRE



A Weir Group Company

Introduction to Faverdale Technology Centre

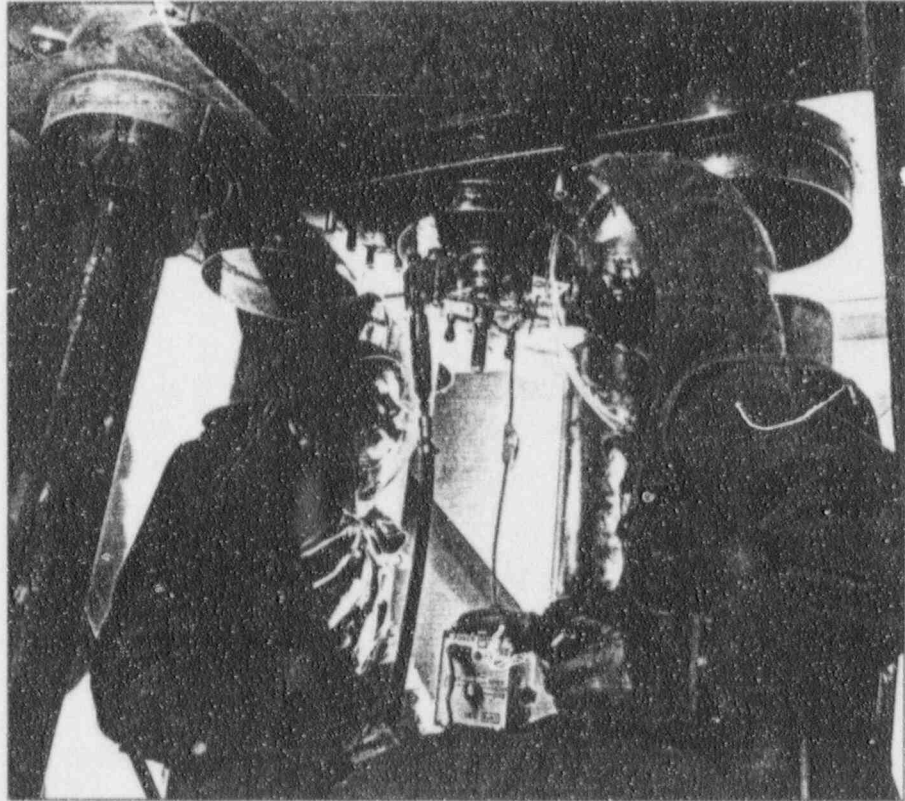
Faverdale Technology Centre is an independent company within the Weir Group. It was formed by the amalgamation and integration of 3 existing laboratories. These brought together on one site the existing experience in physical, chemical and fire testing.

Since it commenced operations as an independent laboratory, the Centre has rapidly developed into one of the United Kingdom's major fire testing laboratories.

As well as a range of standard fire tests, a wide variety of non standard testing and other services are carried out, including the design and manufacture of large scale non standard fire and thermal conductivity testing facilities for organisations such as Eurotunnel and the CAA.



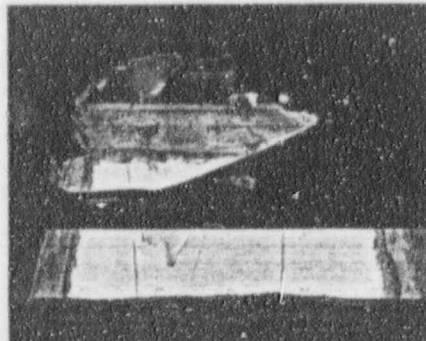
Pool Fire Test



Nuclear Power Station 'In Service' Inspection and Repair



Asbestos Analysis



Fuselage Burnthrough

Standard Fire Test Facilities

3m x 3m Wall Furnace
BS 476 Part 22
 Beam Furnace *BS 476 Part 21*
 Column Furnace *BS 476 Part 21*
 4m x 3m Deck Furnace
BS 476 Part 21 and Part 22
IMO Resolution
 Non-combustability
BS 476 Part 4
 Heat Emission *BS 476 Part 11*
 3m³ Smoke Room
BS 5852, BS 6724, BS 6853
 Aircraft Components
BS 3G100 Part 2 Section 3

Physical Testing

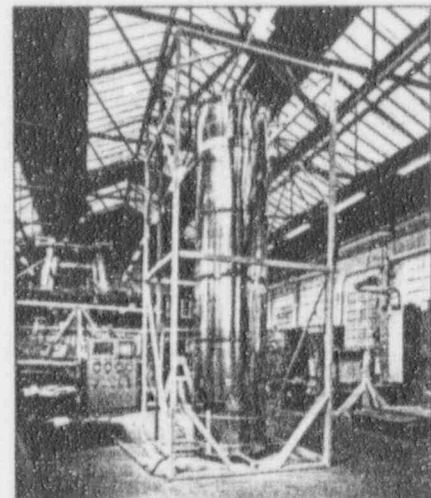
Asbestos Identification
 Asbestos Fibre Counting
 Thermal Conductivity

Health and Safety

Dust Measurements
 Noise Measurements
 Air Monitoring

Specialist Services

- * Consultancy work on fire engineering and fire dynamics
- * Development of Test Techniques
- * Nuclear Reactor feasibility studies



Thermal Conductivity Testing