Westinghouse

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From: Reactor Analysis

Subject: Pressure Drop Across Wire Mesh

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A wire mesh is needed in the reactor to prevent large particles from clogging a core channel orifice or other small passages which could result in excessive local core temperatures. The width of the square mesh has been arbitrarily chosen as one-half the smallest orifice size, .010 inches. Having chosen a mesh width, the remaining parameters which must be defined are: location of the mesh, diameter of the wire and pressure drop. On Curve 547813 is shown the inter-relationship between these parameters where "total wire mesh area" represents the area for hydrogen flow that is covered by wire mesh.

The best location of the wire mesh is across the top surface of the support plate which corresponds to a total screen area of approximately 345 sq. in. At this location the pressure drop and wire mesh diameter are tabulated in Table I together with a pressure drop assuming 67% clogging of the wire mesh.

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TABLE 1 - Relationship Between Pressure Drop and Wire Diameter for the Wire Mesh Located on Top of the Support Plate.

WIRE DIAMETER - INCHES	PRESSURE DROP - PSF	
	NO CLOGGING	67% CLOGGING
0.005	35.0	315
0.01	140.0	1260
0.02	>800	>7200

Please advise us of a recommended wire size which will have satisfactory mechanical strength against the above "clogged flow" pressure drops.

SIGNED: W. L. Howarth
W. L. Howarth

PRESSURE DROP ACROSS WOVEN WIRE . .