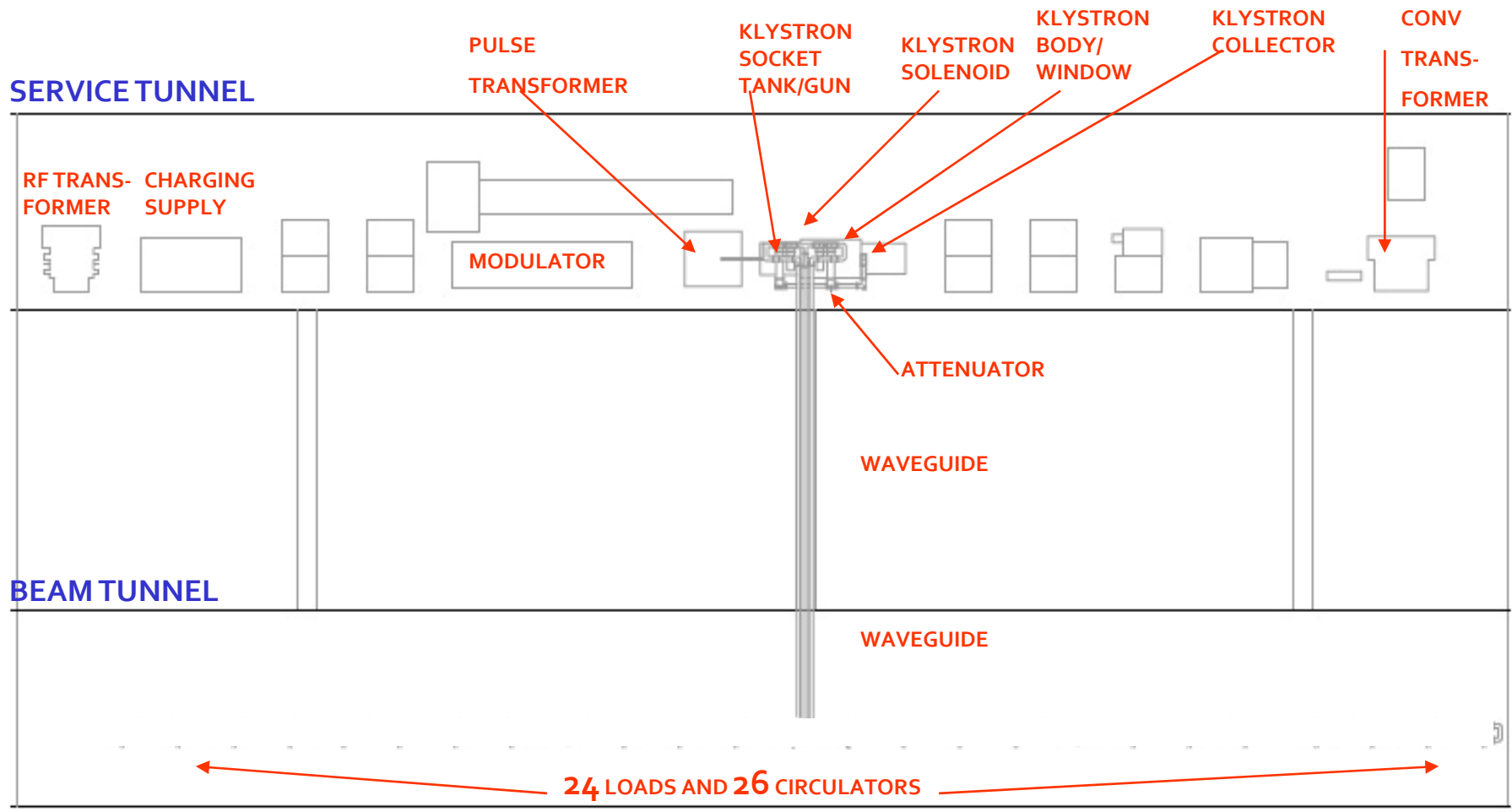


- We're ask to evaluate LCW water system delta T.
- In order to evaluate this (and confirm cost savings), we need more info on the water cooled component and we ask your help in updating or getting more information for each of those items.

Getting the table filled will be helpful, **but as minimum,** the following for each water cooled components are needed

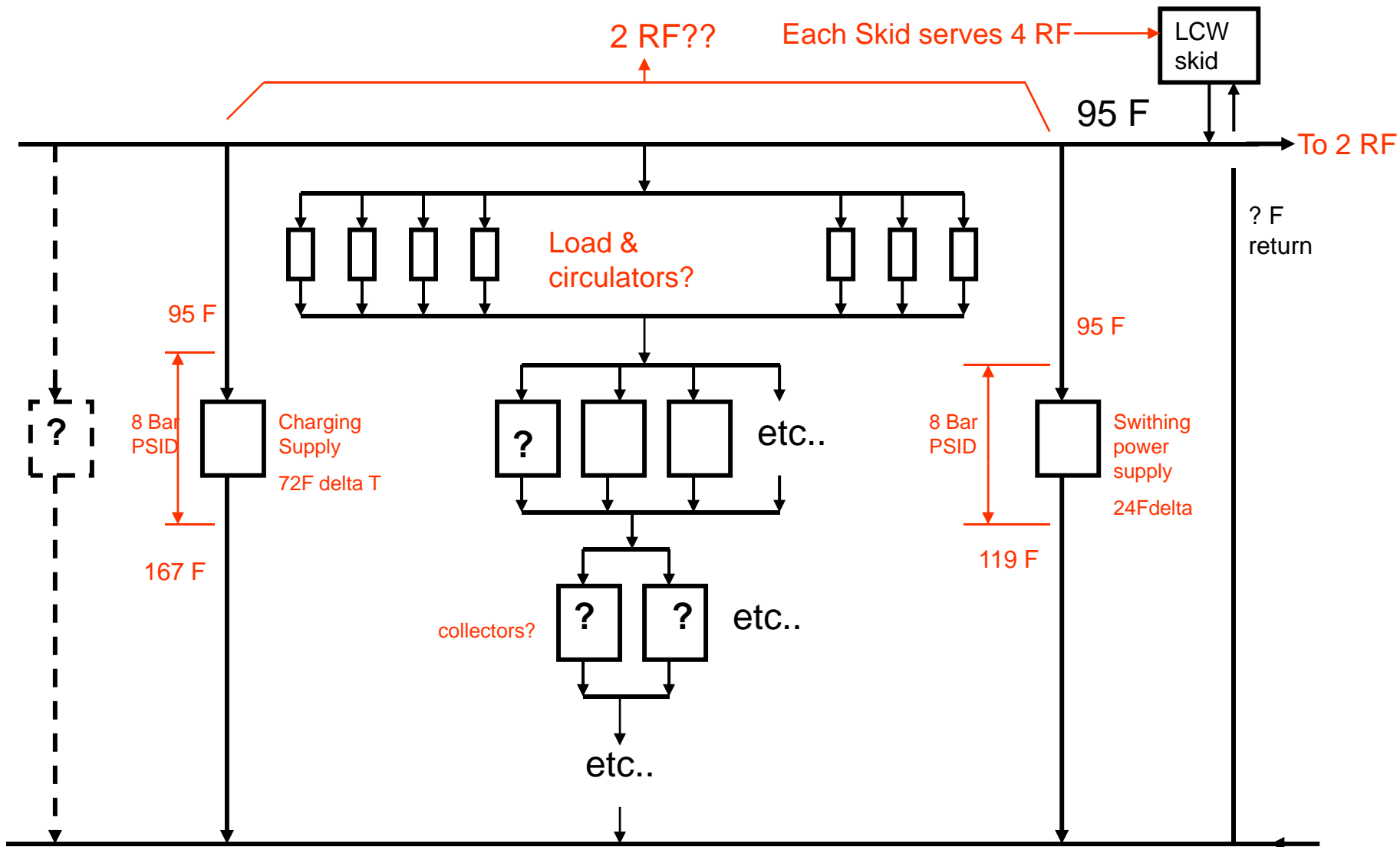
- combination of either one of the following (Load/Flow, or Load/Delta T or Flow/Delta T)
- Maximum allowable temperature
- Pressure drop (corresponding to a given flow)

- If possible, information to be given is agreed upon by the group
- We appreciate Shigeki-san's help in getting the information started



ML RF Water Cooled Components

PLAN VIEW (1 RF)



“Potential” ML RF Water Cooled Components in series

Other ways (keith idea of recirculating collector) can be considered later

Nov 27b 2006

WATER AND AIR HEAT LOAD (all LCW) and 9-8-9 ML

MAIN LINAC - ELECTRON & POSITRON													
Snapshot Nov 27 2006 Components	Quantity Per 36m	Location	To Low Conductivity Water							Chilled Water	keith Jobe load to air Nov 22 06		
			Heat Load to Water (KW)	Max Allowabl e temperat ure	Supply Temp (variatio n) (C)	Delta Temper ature (C delta)	Water Flow (l / min)	m Allowabl e Pressure (Bar)	Typical (water) pressure drop Bar	Acceptabl e Temp Variation delta C	Heat Load to Water (KW)	Power fraction to Tunnel Air (0-1)	Power to Tunnel Air (KW)
RF Charging Supply 34.5 Kv AC-8KV DC	1/36 m	Service Tunnel	2.8		40	40	1.17	18	8	10	0	0.3	1.2
Switching power supply 4kV 50kW	1/36 m		4.5		35	13.6	7.6	13	8	10	0	0.4	3.0
Modulator	1/36 m	Service Tunnel	4.5					28.823			0	0.4	3.0
Pulse Transformer	1/36 m	Service Tunnel	0.7								0	0.3	0.3
Klystron Socket Tank / Gun	1/36 m	Service Tunnel	0.8								0	0.2	0.2
Klystron Focusing Coil (Solenoid)	1/36 m	Service Tunnel	3.6								0	0.1	0.4
Klystron Collector	1/36 m	Service Tunnel	45.8		*35>				2		0	0.0	1.4
Klystron Body	1/36 m	Service Tunnel	0.0		*35>				5	+ 2.5 C	0		
Klystron Windows	1/36 m	Service Tunnel	0.0		*35>				1		0		
Relay Racks (Instrument Racks)	1/36 m	Service Tunnel	0.0		N/A	N/A		N/A	N/A	None	11.5	-0.2	-1.5
Attenuators	2/36 m	Service Tunnel	0.0										
Circulators	26/36 m	Beam Tunnel	32.3									0.1	1.7
Loads	24/36 m	Beam Tunnel								+ - 2.5 C	0		
Waveguide (in service tunnel)	1/36 m	Service Tunnel											
Waveguide (in beam tunnel)	1/36 m	Beam Tunnel	3.5							+ - 2.5 C	0	0.1	0.4
Total RF			100.0								11.5		26.1

Total Heat load to Chilled water (per RF) 37.6

Total Heat load to LCW (per RF) 100.0

cooled by chilled water

cooled by low conductivity water