Measurements	10 minutes after defrost end:	5 minutes after defrost start:
Temperatures:		
Outdoor Dry Bulb		
Outdoor Wet Bulb		
Compressor Discharge		
Compressor Suction		
Liquid at outdoor valve		
Circuit temps at distributor lead end.		
Circuit 1 Top		
Circuit 2		
Circuit 3		
Circuit 4		
Circuit 5		
Circuit 6		
Circuit 7		
Circuit 8		
Circuit 9 Bottom		
Circuit temps at manifold end.		
Circuit 1 Top		
Circuit 2		
Circuit 3		
Circuit 4		
Circuit 5		
Circuit 6		
Circuit 7		
Circuit 8		
Circuit 9 Bottom		
Pressures		
Compressor Discharge		
Compressor Suction		
Liquid at outdoor valve		
Liteport measurements:		
Time between defrost		
Defrost time		
Defrost initiation temperatures:		
Bottom circuit sensor		
Ambient sensor		
Defrost termination temperatures:		
Bottom circuit sensor		
Ambient sensor		

Observations

Weather:

Wind direction and velocity

Condition:

Precipitation	Snow
Freezing rain	Fog

Installation:

Indoor Model Number _____

Date of installation _____

First time problem observed _____

Frequency of problem _____

Unit Location: _____

Orientation of house where unit is? _____

Distance of unit from house _____

Distance of unit from other _____

Orientation of unit _____

Unit under eve? _____

Ambient sensor location: _____

TXV bulb location: _____

TXV bulb contact to tube: _____

Heat Pump Unit operation:

Ice built-up on coil during operation:

Vertically evenly on the coil? _____

Some circuits heavier than others? _____

Which circuits heavier _____

Compared to bottom circuit _____

Uniformly around the perimeter _____

One side more than others _____

Which side _____

Ice melting on coil during defrost:

evenly on all the coil? _____

some circuits faster than others? _____

Which circuits defrost faster _____

Compared to bottom circuit _____

air gap between coil and ice? _____

Ice after defrost:

Amount of ice on the coil _____

Is ice on the louvers? _____

Is there ice on bottom circuit? _____

ice between the louvers and coil? _____

Is there ice on TXV bulb? _____

Ice/snow build up on external cabinet:

On corner posts _____

On louvers _____

On top of unit _____

Observations	Possible Causes of Defrost Problems	Data / Observations	Comments
Ice/snow build excessive on external cabinet	Excessive (unusual) weather conditions beyond that which our design criteria evaluates	Obtain weather conditions from that locale. Are they unusual this year compared to previous years? Temp, RH, wind velocity, measured precipitation, snowfall, freezing rain, fog	We don't have excessive blowing snow or ice against the external of the cabinet in our testing (for instance).
Horizontal bands of ice build that don't clear	Heating circuit imbalance causes more ice build in some than others.	Observe ice formation during heating as ice builds (before defrost initiation). Are some circuits heavier than others?	May not be as likely - air drops off as ice builds so other circuits should start to build ice
Horizontal bands of ice build that don't clear	Blocked bottom circuit (debris, etc.) causes little ice build on it (but others build ice), and short defrost.	Observe ice formation during heating as ice builds (before defrost initiation). Are some circuits heavier than others (esp. bottom circuit - is it light or none?) Measure circuit outlet temps if imbalance present.	
Horizontal bands of ice build that don't clear	Cooling (defrost) circuit imbalance	Observe ice melting during defrost. Do some circuits melt quicker than others? (esp. bottom circuit) Measure circuit outlet temps if imbalance present. Discharge temp.	
Excessive ice on entire coil	Ambient sensor location or unit orientation relative to house, etc.	Are problem units consistenly on a certain side of houses (e.g. North side, ...)? Are they located under eaves? Distance from house or other objects. Which mounting location is the ambient sensor in?	Provide Terry with best location of ambient sensor (and possible loc's they may be in)
Excessive ice on entire coil	Runs too long before defrost, and defrost can't clear heavy ice build	Liteport measurements: initiate temp., terminate temp., time b/w defrosts, length of defrost. Confirm sensor temp's with handheld temp. measurements.	
Excessive ice on entire coil	Defrost time too short to allow complete melting of ice	Age of unit? Has this problem occurred every year or is this the first year it has occurred? Or has the complaint just not be made in previous years?	
Excessive ice on entire coil	Defrost is too fast and produces an air gap between ice build and coil	Data collection system on one site? Including camera (Internet real-time camera)	
Excessive ice on entire coil	Ice bridging to louvered panels that can't be melted by the defrost process	Are there competitive units in the area with louvered panels and the same observed problem?	
		Discharge P&T, Suction P&T on all units in heating and defrost	
		Indoor match (model no.)	
		Does TXV bulb have heavy ice build?	
		Measure suction superheat in heating.	
		Check tightness / contact of bulb with tube.	Move bulb to left tube and insulate to increase heating superheat.
		Does the ice build appear to be mostly external (on corner posts, top, and louvers)?	
		Is ice build even around the perimeter of the unit? Or wind directional?	