

Go To: [964-2](#) [964-4](#) [964-6](#) [964-8](#) 964-F

*Official copies of this Alarm Guide are maintained at this website.
Before using a printed copy, verify that it is the most current
version by checking the document issue date on this cover sheet.*

Apr. 2004

LINAC CAVITY SYSTEM PUMP ROOM ALARMS

NODE: RC 22

**ALARM CODE 964.0
RESTORE 964.1**

LOCATION: BLDG. 930 LINAC

SYSTEM: LINAC CAVITY STATION 1

**ACTION: DETERMINE WHICH SIGNAL IS IN ALARM AND CLICK ON
ALARM RESPONSE SHEET FROM LIST BELOW**

NODE	SIGNAL NAME	DESCRIPTION	PAGE NO.
RC 22	CAV1TEMP.SUP	Cavity #1 Water Supply Temp.	964.0-1
RC 22	CAV1FLO	Cavity #1 Water Flow	964.0-2
RC 22	CAV1PRES.SUP	Cavity #1 Water Supply Press	964.0-3
RC 22	CAV1LVL	Cavity #1 Water Level	964.0-4
RC 22	CAV1MKUP	Cavity #1 Makeup	964.0-5
RC 22	CAV1MKUP.CNT	Cavity #1 Makeup CNT	964.0-6

**NOTE: [IF COMMON ALARM IS RECEIVED - CHECK
MAKE-UP DISPLAY FOR WATER MAKE-UP.](#)**

Feb. 2004

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV1TEMP.SUP	Linac RF Cavity #1 Water Supply Temp	77.5/72.5° f

Action:

1. Verify temp is outside limits
2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV1FLO	Linac RF Cavity Tank #1 Water Flow	65/40 GPM (80-90 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 65 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 40 GPM)
 3. Investigate LEBT tunnel & Cavity station 1 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is >75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV1PRES.SUP	Linac RF Cavity #1 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 2. Advise LCR, MCR
 3. Investigate LEBT tunnel and cavity station 1 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo/LoLo)
CAV1LVL	Linac RF Cavity #1 Water Level	75/30/20 inches (33" – 35" = Normal)

Action:

1. Verify level is outside limits.
 - a) Pumps Shutdown @ $\leq 20''$

2. If level in tank is $\leq 30''$:
 - a) Advise MCR & LCR.
 - b) Investigate LEBT tunnel & cavity station 1 for leak and isolate.
 - c) Add water with manual valve until tank level $\approx 34''$; observe that the level remains constant.

3. If level in tank is $> 75''$:
 - a) Check for leaks @ cavity station #1 and secure manual make-up valve.
 - b) Note 1 & 3 the following workday

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV1MKUP	Linac RF Cavity #1 Make-up	ON/OFF

ACTION:

1. Verify Make-Up is ON on Water Group PC.
2. If Make-up is verified follow [C-A-OPM 2.19](#)

NOTE:

1. Record Actions Taken
2. MCR = Main Control Room
3. Call Water Systems from "Call In" list

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV1MKUP.CNT	Linac RF Cavity #1 Water Make-up count	(Hi/HiHi) 10/25 GAL in 10 min

- ACTION:**
1. Check LEBT tunnel & cavity station 1 for leaks and isolate.
 2. Advise MCR that pumps will shut down after 3 min. If HiHi MKUP occurs
 3. Advise MCR & LCR, isolate leaking device
 4. Notes 1 & 3

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room x4662
 3. Call Water Systems from "Call In" list
 4. LCR = Linac Control Room x4592

[Back to Top](#)

964-2

*Official copies of this Alarm Guide are maintained at this website.
Before using a printed copy, verify that it is the most current
version by checking the document issue date on this cover sheet.*

Feb. 2004

LINAC CAVITY SYSTEM PUMP ROOM ALARMS

NODE: RC 22

ALARM CODE 964.2

RESTORE 964.3

LOCATION: BLDG. 930 LINAC

SYSTEM: LINAC CAVITY STATION 2

**ACTION: DETERMINE WHICH SIGNAL IS IN ALARM AND CLICK ON
ALARM RESPONSE SHEET FROM LIST BELOW**

NODE	SIGNAL NAME	DESCRIPTION	PAGE NO.
RC 22	<u>CAV2TEMP.SUP</u>	Cavity #2 Water Supply Temp.	964.2-1
RC 22	<u>CAV3TEMP.SUP</u>	Cavity #3 Water Supply Temp.	964.2-2
RC 22	<u>CAV2FLO</u>	Cavity #2 Water Flow	964.2-3
RC 22	<u>CAV3FLO</u>	Cavity #3 Water Flow	964.2-4
RC 22	<u>CAV2PRES.SUP</u>	Cavity #2 Water Supply Press.	964.2-5
RC 22	<u>CAV3PRES.SUP</u>	Cavity #3 Water Supply Press.	964.2-6
RC 22	<u>CAV2LVL</u>	Cavity #2 Water Level	964.2-7
RC 22	<u>CAV2MKUP</u>	Cavity #2 Makeup	964.2-8
RC 22	<u>CAV2MKUP.CNT</u>	Cavity #2 Makeup Cnt	964.2-9

[Back to Top](#)

**NOTE: IF COMMON ALARM IS RECEIVED - CHECK
MAKE-UP DISPLAY FOR WATER MAKE-UP.**

Feb. 2004

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV2TEMP.SUP	Linac RF Cavity #2 Water Supply Temp	77.5/72.5° f

- Action:**
1. **Verify temp is outside limits**
 2. **Check for chilled water flow in pump room with temp <60 F**
 - a) **If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.**
 - b) **Note 3 the following workday if successful**
 - c) **If not, Note 3**

- Notes:**
1. **Record Actions Taken**
 2. **MCR = Main Control Room (x 4662)**
 3. **Call Mech Svcs from "Call In" List**
 4. **LCR = Linac Control Room (x4592)**

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV3TEMP.SUP	Linac RF Cavity #3 Water Supply Temp	77.5/72.5° f

- Action:**
- 1. Verify temp is outside limits**
 - 2. Check for chilled water flow in pump room with temp <60 F**
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.**
 - b) Note 3 the following workday if successful**
 - c) If not, Note 3**

- Notes:**
- 1. Record Actions Taken**
 - 2. MCR = Main Control Room (x 4662)**
 - 3. Call Mech Svcs from "Call In" List**
 - 4. LCR = Linac Control Room (x4592)**

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV2FLO	Linac RF Cavity Tank #2 Water Flow	100/65 GPM (160-170 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 2 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is >75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV3FLO	Linac RF Cavity Tank #3 Water Flow	100/65 GPM (130-150 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 2 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is >75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV2PRES.SUP	Linac RF Cavity #2 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 2. Advise LCR, MCR
 3. Investigate LEBT tunnel and cavity station 2 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV3PRES.SUP	Linac RF Cavity #3 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 2. Advise LCR, MCR
 3. Investigate LEBT tunnel and cavity station 2 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo/LoLo)
CAV2LVL	Linac RF Cavity #2 Water Level	75/30/20 inches (33" – 35" = Normal)

- Action:**
1. Verify level is outside limits.

 2. If level in tank is ≤ 30 " :
 - a) Advise MCR & LCR.
 - b) Investigate LEBT tunnel & cavity station 2 for leak and isolate.
 - c) Add water with manual valve until tank level ≈ 34 " ; observe that the level remains constant.

 3. If level in tank is > 75 " :
 - a) Check for leaks @ cavity station #2 and secure manual make-up valve.
 - b) Note 1 & 3 the following workday

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV2MKUP	Linac RF Cavity #2 Make-up	ON/OFF

ACTION:

1. Verify Make-Up is ON on Water Group PC.
2. If Make-up is verified follow [C-A-OPM 2.19](#)

NOTE:

1. Record Actions Taken
2. MCR = Main Control Room
3. Call Water Systems from "Call In" list

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV2MKUP.CNT	Linac RF Cavity #2 Water Make-up count	(Hi/HiHi) 10/25 GAL in 10 min

- ACTION:**
1. Check LEBT tunnel & cavity station 2 for leaks and isolate.
 2. Advise MCR that pumps will shut down after 3 min. If HiHi MKUP occurs
 3. Advise MCR & LCR, isolate leaking device
 4. Notes 1 & 3

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room x4662
 3. Call Water Systems from "Call In" list
 4. LCR = Linac Control Room x4592

[Back to Cavity Station 2 menu](#)

[Back to Top](#)

964-4

Official copies of this Alarm Guide are maintained at this website.

Before using a printed copy, verify that it is the most current version by checking the document issue date on this cover sheet.

Feb. 2004

LINAC CAVITY SYSTEM PUMP ROOM ALARMS

NODE: RC 22

ALARM CODE 964.4

RESTORE 964.5

LOCATION: BLDG. 930 LINAC

SYSTEM: LINAC CAVITY STATION 3

ACTION: DETERMINE WHICH SIGNAL IS IN ALARM AND CLICK ON ALARM RESPONSE SHEET FROM LIST BELOW

NODE	SIGNAL NAME	DESCRIPTION	PAGE NO.
RC 22	<u>CAV4TEMP.SUP</u>	Cavity #4 Water Supply Temp.	964.4-1
RC 22	<u>CAV5TEMP.SUP</u>	Cavity #5 Water Supply Temp.	964.4-2
RC 22	<u>CAV4FLO</u>	Cavity #4 Water Flow	964.4-3
RC 22	<u>CAV5FLO</u>	Cavity #5 Water Flow	964.4-4
RC 22	<u>CAV4PRES.SUP</u>	Cavity #4 Water Supply Press.	964.4-5
RC 22	<u>CAV5PRES.SUP</u>	Cavity #5 Water Supply Press.	964.4-6
RC 22	<u>CAV3LVL</u>	Cavity #3 Water Level	964.4-7
RC 22	<u>CAV3MKUP</u>	Cavity #3 Makeup	964.4-8
RC 22	<u>CAV3MKUP.CNT</u>	Cavity #3 Makeup Cnt	964.4-9

[Back to Top](#)

NOTE: IF COMMON ALARM IS RECEIVED - CHECK MAKE-UP DISPLAY FOR WATER MAKE-UP.

Feb. 2004

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV4TEMP.SUP	Linac RF Cavity #4 Water Supply Temp	77.5/72.5° f

Action:

1. Verify temp is outside limits
2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV5TEMP.SUP	Linac RF Cavity #5 Water Supply Temp	77.5/72.5° f

Action:

1. Verify temp is outside limits
2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV4FLO	Linac RF Cavity Tank #4 Water Flow	100/65 GPM (140-160 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 3 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is >75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV5FLO	Linac RF Cavity Tank #5 Water Flow	100/65 GPM (140-160 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 3 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is > 75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV4PRES.SUP	Linac RF Cavity #4 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 2. Advise LCR, MCR
 3. Investigate LEBT tunnel and cavity station 3 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV5PRES.SUP	Linac RF Cavity #5 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 2. Advise LCR, MCR
 3. Investigate LEBT tunnel and cavity station 3 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo/LoLo)
CAV3LVL	Linac RF Cavity #3 Water Level	75/30/20 inches (33" – 35" = Normal)

- Action:**
1. **Verify level is outside limits.**
 2. **If level in tank is $\leq 30''$:**
 - a) **Advise MCR & LCR.**
 - b) **Investigate LEBT tunnel & cavity station 3 for leak and isolate.**
 - c) **Add water with manual valve until tank level $\approx 34''$; observe that the level remains constant.**
 3. **If level in tank is $> 75''$:**
 - a) **Check for leaks @ cavity station #3 and secure manual make-up valve.**
 - b) **Note 1 & 3 the following workday**

- Notes:**
1. **Record Actions Taken**
 2. **MCR = Main Control Room (x 4662)**
 3. **Call Mech Svcs from "Call In" List**
 4. **LCR = Linac Control Room (x4592)**

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

964.4-8

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV3MKUP	Linac RF Cavity #3 Make-up	ON/OFF

ACTION:

1. Verify Make-Up is ON on Water Group PC.
2. If Make-up is verified follow [C-A-OPM 2.19](#)

NOTE:

1. Record Actions Taken
2. MCR = Main Control Room
3. Call Water Systems from "Call In" list

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV3MKUP.CNT	Linac RF Cavity #3 Water Make-up count	(Hi/HiHi) 10/25 GAL in 10 min

ACTION:

1. Check LEBT tunnel & cavity station 3 for leaks and isolate.
2. Advise MCR that pumps will shut down after 3 min. If HiHi MKUP occurs
3. Advise MCR & LCR, isolate leaking device
4. Notes 1 & 3

NOTE:

1. Record Actions Taken
2. MCR = Main Control Room x4662
3. Call Water Systems from "Call In" list
4. LCR = Linac Control Room x4592

[Back to Cavity Station 3 menu](#)

[Back to Top](#)

964-6

*Official copies of this Alarm Guide are maintained at this website.
Before using a printed copy, verify that it is the most current
version by checking the document issue date on this cover sheet.*

Feb. 2005

LINAC CAVITY SYSTEM PUMP ROOM ALARMS

NODE: RC 22

ALARM CODE 964.6

RESTORE 964.7

LOCATION: BLDG. 930 LINAC

SYSTEM: LINAC CAVITY STATION 4

**ACTION: DETERMINE WHICH SIGNAL IS IN ALARM AND CLICK ON
ALARM RESPONSE SHEET FROM LIST BELOW**

NODE	SIGNAL NAME	DESCRIPTION	PAGE NO.
RC 22	<u>CAV6TEMP.SUP</u>	Cavity #6 Water Supply Temp.	964.6-1
RC 22	<u>CAV7TEMP.SUP</u>	Cavity #7 Water Supply Temp.	964.6-2
RC 22	<u>CAV6FLO</u>	Cavity #6 Water Flow	964.6-3
RC 22	<u>CAV7FLO</u>	Cavity #7 Water Flow	964.6-4
RC 22	<u>CAV6PRES.SUP</u>	Cavity #6 Water Supply Press.	964.6-5
RC 22	<u>CAV7PRES.SUP</u>	Cavity #7 Water Supply Press.	964.6-6
RC 22	<u>CAV4LVL</u>	Cavity #4 Water Level	964.6-7
RC 22	<u>CAV4MKUP</u>	Cavity #4 Makeup	964.6-8
RC 22	<u>CAV4MKUP.CNT</u>	Cavity #4 Makeup Cnt	964.6-9

[Back to Top](#)

**NOTE: IF COMMON ALARM IS RECEIVED - CHECK
MAKE-UP DISPLAY FOR WATER MAKE-UP.**

Feb. 2005

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV6TEMP.SUP	Linac RF Cavity #6 Water Supply Temp	77.5/72.5° f

- Action:**
1. Verify temp is outside limits
 2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV7TEMP.SUP	Linac RF Cavity #7 Water Supply Temp	77.5/72.5° f

- Action:**
1. **Verify temp is outside limits**
 2. **Check for chilled water flow in pump room with temp <60 F**
 - a) **If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.**
 - b) **Note 3 the following workday if successful**
 - c) **If not, Note 3**

- Notes:**
1. **Record Actions Taken**
 2. **MCR = Main Control Room (x 4662)**
 3. **Call Mech Svcs from "Call In" List**
 4. **LCR = Linac Control Room (x4592)**

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV6FLO	Linac RF Cavity Tank #6 Water Flow	100/65 GPM (160-170 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 2 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is >75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV7FLO	Linac RF Cavity Tank #7 Water Flow	100/65 GPM (130-150 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 2 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is > 75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV6PRES.SUP	Linac RF Cavity #6 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 4. Advise LCR, MCR
 5. Investigate LEBT tunnel and cavity station 2 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV7PRES.SUP	Linac RF Cavity #7 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 4. Advise LCR, MCR
 5. Investigate LEBT tunnel and cavity station 2 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo/LoLo)
CAV4LVL	Linac RF Cavity #4 Water Level	75/30/20 inches (33" – 35" = Normal)

Action:

1. Verify level is outside limits.

2. If level in tank is ≤ 30 " :
 - d) Advise MCR & LCR.
 - e) Investigate LEBT tunnel & cavity station 2 for leak and isolate.
 - f) Add water with manual valve until tank level ≈ 34 "; observe that the level remains constant.

3. If level in tank is > 75 " :
 - a) Check for leaks @ cavity station #2 and secure manual make-up valve.
 - b) Note 1 & 3 the following workday

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV4MKUP	Linac RF Cavity #4 Make-up	ON/OFF

ACTION:

- 1. Verify Make-Up is ON on Water Group PC.**
- 2. If Make-up is verified follow [C-A-OPM 2.19](#)**

NOTE:

- 1. Record Actions Taken**
- 2. MCR = Main Control Room**
- 3. Call Water Systems from "Call In" list**

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV4MKUP.CNT	Linac RF Cavity #4 Water Make-up count	(Hi/HiHi) 10/25 GAL in 10 min

- ACTION:**
- 1. Check LEBT tunnel & cavity station 2 for leaks and isolate.**
 - 2. Advise MCR that pumps will shut down after 3 min. If HiHi MKUP occurs**
 - 3. Advise MCR & LCR, isolate leaking device**
 - 4. Notes 1 & 3**

- NOTE:**
- 1. Record Actions Taken**
 - 2. MCR = Main Control Room x4662**
 - 3. Call Water Systems from "Call In" list**
 - 4. LCR = Linac Control Room x4592**

[Back to Cavity Station 4 menu](#)

[Back to Top](#)

964-8

*Official copies of this Alarm Guide are maintained at this website.
Before using a printed copy, verify that it is the most current
version by checking the document issue date on this cover sheet.*

Feb. 2005

LINAC CAVITY SYSTEM PUMP ROOM ALARMS

NODE: RC 22

**ALARM CODE 964.8
RESTORE 964.9**

LOCATION: BLDG. 930 LINAC

SYSTEM: LINAC CAVITY STATION 5

**ACTION: DETERMINE WHICH SIGNAL IS IN ALARM AND CLICK ON
ALARM RESPONSE SHEET FROM LIST BELOW**

NODE	SIGNAL NAME	DESCRIPTION	PAGE NO.
RC 22	<u>CAV8TEMP.SUP</u>	Cavity #8 Water Supply Temp.	964.8-1
RC 22	<u>CAV9TEMP.SUP</u>	Cavity #9 Water Supply Temp.	964.8-2
RC 22	<u>CAV8FLO</u>	Cavity #8 Water Flow	964.8-3
RC 22	<u>CAV9FLO</u>	Cavity #9 Water Flow	964.8-4
RC 22	<u>CAV8PRES.SUP</u>	Cavity #8 Water Supply Press.	964.8-5
RC 22	<u>CAV9PRES.SUP</u>	Cavity #9 Water Supply Press.	964.8-6
RC 22	<u>CAV5LVL</u>	Cavity #5 Water Level	964.8-7
RC 22	<u>CAV5MKUP</u>	Cavity #5 Makeup	964.8-8
RC 22	<u>CAV5MKUP.CNT</u>	Cavity #5 Makeup Cnt	964.8-9

[Back to Top](#)

**NOTE: IF COMMON ALARM IS RECEIVED - CHECK
MAKE-UP DISPLAY FOR WATER MAKE-UP.**

Feb. 2005

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV8TEMP.SUP	Linac RF Cavity #8 Water Supply Temp	77.5/72.5° f

- Action:**
1. Verify temp is outside limits
 2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo)
CAV9TEMP.SUP	Linac RF Cavity #9 Water Supply Temp	77.5/72.5° f

- Action:**
1. Verify temp is outside limits
 2. Check for chilled water flow in pump room with temp <60 F
 - a) If not, advise LCR, MCR and Call Plant Engineering Site Shift Supervisor at x4174, cell – 872-8988 or C/W desk x4284 during off hours.
 - b) Note 3 the following workday if successful
 - c) If not, Note 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV8FLO	Linac RF Cavity Tank #8 Water Flow	100/65 GPM (140-160 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 3 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is > 75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Lo/LoLo)
CAV9FLO	Linac RF Cavity Tank #9 Water Flow	100/65 GPM (140-160 GPM=Normal)

- ACTION:**
1. Verify Low flow ≤ 100 GPM
 2. Advise MCR & LCR (Pumps will stop @ ≤ 65 GPM)
 3. Investigate LEBT tunnel & Cavity station 3 for leaks and isolate.
 4. Check other system parameters:
 - a) Pressure is > 75 psig
 5. Note 3 & 1

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room
 3. Call Mech Svcs from "Call In" list

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV8PRES.SUP	Linac RF Cavity #8 Water Supply Press	<60 psi

Action:

1. Verify lo press condition
4. Advise LCR, MCR
5. Investigate LEBT tunnel and cavity station 3 and isolate.
4. Note 1 & 3

Notes:

1. Record Actions Taken
2. MCR = Main Control Room (x 4662)
3. Call Mech Svcs from "Call In" List
4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

964.8-6

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u>
CAV9PRES.SUP	Linac RF Cavity #9 Water Supply Press	<60 psi

- Action:**
1. Verify lo press condition
 4. Advise LCR, MCR
 5. Investigate LEBT tunnel and cavity station 3 and isolate.
 4. Note 1 & 3

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u>	<u>DESCRIPTION</u>	<u>ALARM LIMITS</u> (Hi/Lo/LoLo)
CAV5LVL	Linac RF Cavity #5 Water Level	75/30/20 inches (33" – 35" = Normal)

- Action:**
1. Verify level is outside limits.
 2. If level in tank is $\leq 30"$:
 - d) Advise MCR & LCR.
 - e) Investigate LEBT tunnel & cavity station 3 for leak and isolate.
 - f) Add water with manual valve until tank level $\approx 34"$; observe that the level remains constant.
 3. If level in tank is $> 75"$:
 - a) Check for leaks @ cavity station #3 and secure manual make-up valve.
 - b) Note 1 & 3 the following workday

- Notes:**
1. Record Actions Taken
 2. MCR = Main Control Room (x 4662)
 3. Call Mech Svcs from "Call In" List
 4. LCR = Linac Control Room (x4592)

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

964.8-8

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV5MKUP	Linac RF Cavity #5 Make-up	ON/OFF

ACTION:

1. Verify Make-Up is ON on Water Group PC.
2. If Make-up is verified follow [C-A-OPM 2.19](#)

NOTE:

1. Record Actions Taken
2. MCR = Main Control Room
3. Call Water Systems from "Call In" list

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

964.8-9

ALARM RESPONSE SHEET - LINAC CAVITY

<u>SIGNAL NAME</u> <u>LIMITS</u>	<u>DESCRIPTION</u>	<u>ALARM</u>
CAV5MKUP.CNT	Linac RF Cavity #5 Water Make-up count	(Hi/HiHi) 10/25 GAL in 10 min

- ACTION:**
1. Check LEBT tunnel & cavity station 3 for leaks and isolate.
 2. Advise MCR that pumps will shut down after 3 min. If HiHi MKUP occurs
 3. Advise MCR & LCR, isolate leaking device
 4. Notes 1 & 3

- NOTE:**
1. Record Actions Taken
 2. MCR = Main Control Room x4662
 3. Call Water Systems from "Call In" list
 4. LCR = Linac Control Room x4592

[Back to Cavity Station 5 menu](#)

[Back to Top](#)

