

MOD U

DS ALARMS

DIAGNOSTICS

INTRODUCTION

DO 013252
CONFIDENTIAL

CHLORINATED METHANES

Department: CMP

Job Title: Trouble shooting the MOD V using the DS ALARMS

Scope: To provide the operator with necessary information needed to properly diagnose the MOD V system in event there are problems with the MOD V computer and/or any HARDWARE problems.

Understanding MOD V on line DIAGNOSTICS has been written to help MOD V operators. If the MOD V develops a hardware problem, self-diagnostics inherent to the MOD V can help identify most problems before they can become serious or put the control of the process plant in jeopardy. The DS 1-20 (digital special) lamps in the lower right hand corner of the "can" Graphics panel might be considered as the "WATCHDOG" of the MOD V. A thorough understanding of the individual and collective meaning of these DS lamps is imperative for minimum, risk to the process if a hardware problem develops. Remember, when a problem occurs, there may not be enough time to refer to instruction manuals-- you need to understand the system diagnostics before a problem develops.

Along with the DS alarms there have been 4 other ALARMS written to assist the operator in trouble shooting the MOD V HARDWARE SYSTEM. They are alarms 197-200 (R-300). If any DS alarm relating to HARDWARE problems activates, one of these alarms should also activate.

Every effort will be made to keep this information current and accurate, but one must remember that there will always be changes to any control system.

DS 1,2,9,10

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Trouble shooting the MOD V using the DS ALARMS
(DS ALARMS 1,2,9 and 10)

DS lamps 1,2,9 and 10 are used to inform the operator as to which computer (left or right) is operating as the FOX and which is operating as the DOG.

These DS lamps are for information purposes only.

If any problem is observed that relates to these DS alarms the following plan of action is suggested.

1. Check to see if there are any other problems beginning to occur with the MOD V system, even though seeminly unrelated. If the answer is yes, there is a real possibility of a serious hardware problem with one of the computers.
2. Check the computers DEBUG panel display window. Both computer should be counting and be the same.

 IE. left computer should read (d4590)
 right computer should read (f4590)
3. If the Debug panel display appears normal, do a LIST 1 execute command. This will swap the computers. After you have swapped the computers, observe the Debug panel display again for proper operation and observe if the DS lamps swapped. If everthing looks OK. Then do a LIST 1 execute command to swap the computers back.
4. If the above check indicates both computers are performing normally, do a list 22. This will print out any related graphics DS bulb problems (circuitry problems). They are not viewed as serious however; you should contact the plant instrument personnel.
5. If the computer Debug panel display window is incorrect or a LIST 1 function cannot be properly initiated, the problem should be concidered serious. CALL MOD V HARDWARE PERSONNEL.
6. If a serious problem has been diagnosed with either computer, one that is causing serious problems, consideration should be given to stopping the FAULTY computer.

NOTE: There are usually other DS alarms on if a serious hardware problems exist.

DS 3,11

DO 013256
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DS 3 and 11 graphics lights are to inform the operator if either computer (left or right) is STOPPED or DIES for any reason. If a computer failure occurs, DS 3 or 11 lamp on each can in the system will activate.

If a computer has to be taken off line for routine maintenance or program loading, these lights will activate.

If DS 3 or 11 activates check the following:

1. Check the computer Debug panel to see if the both computers are still counting together. Especially the one that shows failed. A computer that has stopped counting is enough verification in itself that a computer has really stopped.
2. If the DEBUG panel window indicated "4ABAD" this will probably mean that there is problems with that computers A/D converter related circuitry and was halted to prevent process upsets. Also check to see if DS alarms 6 or 14 have activated.
3. Check DS 4 and 12 (major link problems). They will be activated if either computer has stopped running.
4. If DS 4 or 12 has not activated, check the DS 3 or 11 lamps on the other cans in the system. If they are not on, the problems may not be as serious. It could be a faulty lamp driver or motherboard failure of that can.
5. Check to see if there are any control problems or abnormalities.
6. IF THE COMPUTER HAS REALLY FAILED CONTACT MOD V HARDWARE PERSONEEL AND YOU SUPERVISOR.

DO 013258
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DS 4 and 12 lamps are used to inform the operator when there is a problem with the "COMMUNICATION LINK" between the two computers.

Communication problems that might occur that directly involve the "MAJOR LINK BUS" will turn both DS lamps on at the same time.

If either computer is intentionally halted for any reason, both DS 4 and 12 will activate.

If DS 4 and/or 12 alarm activates, check the Following:

1. Check to see if DS alarms 3 or 11 has activated. (computer has stopped). If the computer has stopped contact MOD V HARDWARE PERSONNEL AND YOUR SUPERVISOR.
2. Check the DEBUG panel windows to see if the DOG computer has upgraded to EAGLE. If so, then problems are likely to occur when you have TWO FOX computers or an EAGLE and a FOX fighting for control.
3. Also on the DEBUG panels the last two digits "90" will not be indicating.

IMPORTANT: Because of the "FOX FIGHT" that may be occurring, all "CAN" operation may become inoperative.

4. If the SCENARIO described in item 2 occurs, plant supervision should give immediate consideration to "HALTING" one of the computers.

If there are no other clues as to which computer has the problem, "HALT" the original "DOG" computer.

To halt a computer, use the TOGGLE SWITCH, (up for RUN/down for halt) which is located directly below the DEBUG panel. After halting quickly observe the graphics panel, AO outputs to confirm that everything is OK. If not restart the computer.

NOTE: THIS APPLIES ONLY IF BOTH COMPUTERS APPEAR TO BE OPERATING NORMALLY.

NOTE: BEFORE HALTING ONE OF THE COMPUTERS, BE PARTICULARLY OBSERVANT AS TO WHAT IS OCCURRING IN THE PROCESS, SO IF THINGS GET WORSE WHEN THE COMPUTER IS HALTED, IT CAN QUICKLY BE RESTARTED.

DO 013260
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DS 5 and 13 alarm lamps are used to inform the operator when there has been a 120 V.A.C. power loss to either one or both computers. If either one or both of these DS lamps are activated, the same lamp pattern should be displayed on all "cans" throughout the system.

If DS 5 or 13 alarm lamps should activate and you really did lose AC power, 30 seconds after they activated DS alarms 17 and/or 18 would activate

If you actually lose AC power to both computers, you will have approx 30 minutes of run time on the cans before the batteries are drained.

If you lose AC power to just one computer, the other one will still be functional for control.

In the event DS 5 or 13 activates, check the following;

1. Did we lose power to the entire plant, if so then go through emergency shutdown procedures.

2. Did we lose power to one or both computers.

If power is lost to both computers but not to the rest of the plant, it is imperative that we get electricians to check the system out and at least one computer powered up before the batteries are drained and the computers are halted.

3. Has DS 17 or 18 activated.

4. If DS 17 or 18 has not activated and the DS 5 or 13 alarms on the other cans in the system haven't activated. Do a LIST 22 FUNCTION (PROBLEMS IN THE BULB CIRCUITRY)

DO 013262
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DS 6 and 14 are used to inform the operator if there is problem with the A/D converter (analog to digital). If one of the MOD V computers detects a problem with the A/D converter, the mod will activate the DS alarms in all "CANS" in the system.

If an AD failure occurs, proper communications with the bad computer and all the I/O modules in every can in the system that interfaces with will be lost. Field devices directly controlled by the mod may be improperly operated.

If A/D related circuitry fails, it is best to "HALT" the faulty computer immediately rather than to allow it to "RUN" and cause a major process upset.

The mod is equipped with a SOFTWARE SUBROUTINE called ADCCHK which monitors the A/D converter circuitry. If problems are detected it will automatically "HALT" the computer. However; because of the complexity of the program, it can also point to other hardware problems not directly related to A/D problems. Either way the problem is serious.

The "ADCCHK" subroutine can "HALT" a faulty computer so fast that DS alarms 6 or 14 lamps may not have time to activate. Look for "4ABAD" in the DEBUG panel window. This will usually indicate an A/D converter problem.

If you are only operating one computer the "ADCCHK" routine will be disarmed.

In the event DS alarm 6 or 14 activates check the following;

1. Are all the DS 6 or 14 alarms on all the cans in the system
2. Does the DEBUG panel window display indicate "4ABAD"
3. Did alarm 3 or 11 activate (computer halted)
4. If all of the above contact MOD V HARDWARE PERSONNEL.
5. Do a list 22 function if only one can alarms and not the others and alarm 3 or 11 didn't activate and "4ABAD" is not in the DEBUG panel window display. List 22 will print out any DS bulb problems.

DS 7

DO 013264
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The DS 7 lamp when lit, indicates that the left computer is driving the alms/ds lamps/aib and the right computer is driving the di/do/ao/aborts. They swap roles every 4 seconds. When the DS 7 light goes out, it indicates that the right computer is now driving the alms/ds/aibs.

If both computers are in agreement and functioning properly together in proper sequence, the graphics panel bulbs should show a steady pattern. However; if there is a disagreement between the two computers, ALARMS/GRAPHIC LAMPS/DS may be alternating ON/OFF. You then must look at the DS 7 lamp to identify which computer the alarm is on. If an alarm is activated when the DS 7 lamp is lit and clears when the DS 7 lamp goes off, indicates a disagreement between the computers.

In the event you notice erratic lamp action or alarms alternating on and off, check the following:

1. Observe a few key process variable inputs (ai,di) that you normally monitor and check the 10 display windows for any abnormalities.
2. Open the front door and observe LED'S on DI's and DO's and determine if the graphics are correct.
3. Observe a few key variable outputs (ao,do) using the MCU panel and the AO meters that are located above the AO disconnect switches.
4. Check to see if the problems is with all graphics panels or just that one.
5. Check to see if the two computers are still taking turns running the graphics panel every 4 seconds.
6. If the problems proves to be serious it may be necessary to "HALT" the bad computer, if you can determine which one it is. To HALT the computer use the TOGGLE SWITCH located below the DEBUG panel. As soon as you halt the computer quickly observe the process operations to confirm proper operations of the MOD.

NOTE: If you guessed wrong restart the computer.

DO 013266
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DS 15 alarm lamp informs the operator when there is a memory problem with one or both computers.

If DS 15 alarm lamp activates, do the following:

1. Check to see if DS 15 lamp came on, on all the other cans. If they are lit on all the other cans in the system, then the alarm condition is probably real.
2. Observe DS 7 light. If the DS 15 lamp comes "ON" when the DS 7 lamp is "ON", then the memory error is in the LEFT computer.

If the DS 15 lamp comes "ON" when the DS 7 lamp is "OFF", then the memory error is in the RIGHT computer.
3. Once the computer with the problems has been identified, watch the process very closely for problems-especially the actions of the computer with the faulty memory.
4. If there are obvious process control problems, supervision should give immediate consideration to "HALTING" the faulty computer.
5. Check to see if there are any DS bulb circuitry problems by calling up list 22.
6. Call MOD V HARDWARE PERSONNEL.

NOTE: It is possible to have a "FALSE" Memory Check error shortly after a computer has been "RESTARTED". These are not true errors and are a function of how the Memory Diagnostics works.

DO 013268
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The DS 16 lamp usually occurs as a result of one of the computers having a hard time reading the proper value for a "BUTTON" that has been "PUSHED" on the MCU panel.

Another common occurrence is when a computer has been "HALTED" and while it was off line, a new request was made on the other computer.

If the DS 16 lamp activates do the following;

1. Press the execute button on the MCU , with the alarm.
2. Observe the current table, element and value.
3. Using the FOX/DOG switch, go to the other position and push the execute button again.
4. They should read the same value. However; because of the address error they may actually show a different value.
5. If the alarm activated while you where entering a request. or if the computer has been down and just restarted, try re-enter the request. This should clear up the problem.
6. Check any other alarms that may have activated along with this one.
7. In the event the alarm cannot be cleared, call the MOD V HARDWARE PERSONNEL.

NOTE: A lot of fast button pushing can cause the alarm to activate.

NOTE: Hardware problems such as bad "MOTHER BOARDS, COMPUTER or MSI LOGIC" can cause address errors.

DO 013270
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The DS 17 lamp informs the operator if there is HIGH or LOW or low VOLTAGE in the LEFT BUS BAR. The normal voltage is 28.6 V.D.C. If the voltage rises above 30 VDC or drops below 26 VDC. The alarm will activate.

If the DS 17 lamp activates it could mean several different things.

1. A 120 volt power has been lost to the can.
2. 28 volt charger has failed in a particular can somewhere in the system.
3. Fuses may have failed in the junction box from the UPS system (computer room)
4. High voltage is possible if a 28 volt charger failes. (a Charger is designed to trip itself at 32.8 volts.)
5. DS alarm 5,13,17,18 and 30 should work together to help trouble shoot the problem.

NOTE: There are other hardware related problems that can cause DS 17 to activate. I.E. Motherboard failure or bulb driver bad.

In the event that DS 17 activated do the following:

1. Check to make sure both computer agree that the alarm is true. The DS 17 lamp should STAY ON STEADY and not pulse.
 2. If the alarm is pulsing on and off, Check to see which computer is driving the DS alarm. It could be a problem just with that computer. (check DS 7)
 3. Check any other alarms that may have activated along with DS 17.
 4. Do a list 22 function to check for bad DS circuitry
 5. Call MOD V HARDWARE PERSONNEL.
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DO 013272
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The DS 18 lamp informs the operator if there is HIGH or LOW or low VOLTAGE in the RIGHT BUS BAR. The normal voltage is 28.6 V.D.C. If the voltage rises above 30 VDC or drops below 26 VDC. The alarm will activate.

If the DS 18 lamp activates it could mean several different things.

1. A 120 volt power has been lost to the can.
2. 28 volt charger has failed in a particular can somewhere in the system.
3. Fuses may have failed in the junction box from the UPS system (computer room)
4. High voltage is possible if a 28 volt charger failes. (a Charger is designed to trip itself at 32.8 volts.)
5. DS alarm 5,13,17,18 and 30 should work together to help trouble shoot the problem.

NOTE: There are other hardware related problems that can cause DS 18 to activate. I.E. Motherboard failure or bulb driver bad.

In the event that DS 18 activated do the following:

1. Check to make sure both computer agree that the alarm is true. The DS 18 lamp should STAY ON STEADY and not pulse.
 2. If the alarm is pulsing on and off, Check to see which computer is driving the DS alarm. It could be a problem just with that computer. (check DS 7)
 3. Check any other alarms that may have activated along with DS 18.
 4. Do a list 22 function to check for bad DS circuitry
 5. Call MOD V HARDWARE PERSONNEL.
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DS 19,20

DO 013274
CONFIDENTIAL

DS 19/20 lamp informs the operator when there is a problem with the BULB circuitry or the BULB itself is bad.

In the event DS 19/20 activate do the following:

1. Check to make sure that both computers agree. If both computers agree DS 19 and 20 should be on and holding steady without pulsing ON/OFF.
2. If only one computer indicates that there is a bulb problem this usually indicates a problem on the BULB DRIVER BOARD.

IF THIS IS THE CASE CONTACT MOD V HARDWARE PERSONNEL.

3. Do a list function to determine which bulb is out

List 14-15, 20-23 and 29 are all bulb circuitry problem list functions.

4. Replace the bad bulb.

NOTE: THE FOX COMPUTER DRIVES THE PRINTER, THEREFORE THE FOX COMPUTER MUST BE SEEING A BULB PROBLEM, IN ORDER TO PRINT OUT ANY BULB PROBLEM.

NOTE: IF THE DOG COMPUTER (USUALLY THE LEFT COMPUTER) IS THE ONLY COMPUTER SEEING THE BULB PROBLEM, IT MAY BE NECESSARY TO SWAP THE COMPUTERS SO A PRINT OUT OF THE BULB PROBLEMS CAN BE OBTAINED.

DS 21

DO 013276
CONFIDENTIAL

DS 21 activates when an AI or DI has been placed in MANUAL. This alarm is basically a reminder to the operator that he has placed an AI/DI in manual.

This alarm will only be activated in the "CANS" graphic panels that contain that AI or DI.

In the event DS 21 is activated, do the following if you are unaware of the AI/DI's that are in manual.

1. Do a LIST 12 and/or list 13 execute. This will print out any AI's or DI's that may be in manual.
2. If the DS 21 activates and there are no AI/DI in manual then do a list 22 function to determine any DS alarm circuitry problems.

NOTE: The DS 21 light should not pulse when the computer switch turns on driving the DS alarms. If they do this could indicate a disagreement between the computers.

DO 013278
CONFIDENTIAL

DS 22 activates when an AO or DO has been placed in MANUAL. This alarm is basically a reminder to the operator that he has placed an AO/DO in manual.

The MOD will NOT detect if the OVERRIDE DISCONNECT SWITCHES are used.

This alarm will only be activated in the "CANS" graphic panel that contain that AO or DO.

In the event DS 22 is activated, do the following if you are unaware of the AO/DO's that are in manual.

1. Do a LIST 18 and/or list 19 execute. This will print out any DO's or AO's that may be in manual.
2. If the DS 22 activates and there are no AO/DO in manual then do a list 22 function to determine any DS alarm circuitry problems.

NOTE: The DS 22 light should not pulse when the computer switch turns on driving the DS alarms. If they do this could indicate a disagreement between the computers.

DO 013280
CONFIDENTIAL



DS 23 will be activated when the "ABORT KEY" has been turned on. When the "ABORT KEY" is in the "ON" position, the MOD V can no longer abort AO's and DO's (hardware aborts) or AO,DO,DI and AI (software aborts) for that "can".

DS 24 will also activate confirming that an alternate ground path has been established.

In the event the DS 23 lamp is lit check the following:

1. Is the "ABORT KEY" actually in the "ON" position. If it is "WHY"
2. Is DS 24 lamp on confirming a path to ground.
3. If the "ABORT KEY" isn't in the "ON" position or if DS 24 is not lit. Do a list 22 function which will print out any DS alarm circuitry problems.
4. Do a list 24 to print out any aborts with a "TRACK" problem or a "FIELD SHORT" problem. This will also print out any AO's/DO's that have been provided an alternate ground path, if the abort key has been activated.
5. Check any other alarms that may have activated with this alarm.

NOTE: A bad "MOTHER BOARD" can also activate this alarm

NOTE: Turning of the "ABORT KEY" requires supervisor approval.

DO 013282
CONFIDENTIAL

The DS 24 lamp will activated if one of the following conditions occur.

1. The "ABORT KEY" is in the "ON" position
2. An "ABORT TRACK" problem has been detected.
3. A "FIELD SHORT" condition has occurred on the abort module.

If DS 24 activates check the following:

1. Verify that both computers agree. The DS lamp should be lit and steady. If the light is pulsing when the computers swap turns driving the DS lamps, there is computer disagreement.
2. Is the "ABORT KEY" in the "ON" position. If so "WHY"
3. Do a list 24 function to determine if there are any "ABORT TRACK, FIELD SHORT OR TEST TRACK" problems.
4. Also do the following list functions;
list 22,30
5. If an "ABORT HARDWARE" problem is suspected contact the "MOD V HARDWARE PERSONNEL".

NOTE: In the event the "ABORT ACTIVE MODULE" has to be removed from the MOD V, the "ABORT KEY" will have to be "ACTIVATED"

DS 25/29 informs the operator that there is an AO/DO track/test problem. The Mod V automatically runs on-line diagnostics on each AO and DO. If these diagnostics detect a problem with any AO or DO point in the system, DS 25 or 29 will activate.

The diagnostics are as follows. If the "VALUE" of what either computer is "TRYING" to output doesn't match the value of what is "ACTUALLY" going to the field device, DS 25 will activate.

During the test portion of the on-line diagnostics, all outputs have a test pulse sent to them. If the mod doesn't detect a complete circuit from the mod to the field device or from the field device to the mod, DS 29 will activate. This could indicate a "CUT WIRE" or "INADEQUATE CONNECTION".

Also, if one of the override switches is turned to a non-horizontal position, DS 29 will activate.

In the event DS 25/29 activates, check the following:

1. Check to see if the DS alarm is pulsing or continuous. If pulsing, watch the DS 7 lamp. When it is lit, the left computer is driving the DS alarms. If DS 25/29 is ON when DS 7 is ON and OFF when DS 7 is OFF the Problem can be the left computer seeing a track/test problem and the RIGHT computer is OK.
2. Do a list 16/17 Which will print out any DO/AO track/test problems.
3. Do a list 22 to check for possible DS alarm circuitry problems.
4. Do a list 30 which will print out the list of the last bad I/O points found in the system.
5. If you have determined that there is an AO track/test problem, you can check the AO value (table 30) against the AO track value (table 32, actual value to field device) using the MCU panel. These values should be very close to the same value. If they differ by more than 1.5%, the interaction or oscillation between the two computers may be creating a false AO track/test alarm. This can be caused by poor tuning constants. Place the control valve in manual for a few seconds and let the computers get back together again. (HAVE THE CONTROLLER TUNED)
6. Once you have called up the AO, use the FOX/DOG switch to determine that the computers are in agreement, for both table 30 and 32.
7. If you have determined that there is a DO track/test problem, You can check the DO value (table 50) against the DO track value (table 52, actual value to the field device) and compare the readings.

CONTINUATION:

8. Using the FOX/DOG switch, check to see if the computers are in agreement for both table 50 and 52.

9. CONTACT MOD V HARDWARE PERSONNEL AND/OR INSTRUMENT PERSONNEL.

NOTE: DO problems are usually the type that one of the computers is not outputting for some reason.

NOTE: Remember that the mod chooses the "HIGHEST VALUE" and the highest track value to the field will "WIN".

IMPORTANT: DO NOT do a list 5 function (FOX TO DOG ACTIVE DATE UPDATE) when any AO/DO track or test problems are present anywhere in the MOD V system. If this is done, the actual AO/DO values from the FOX's will go to the field device. It could be the one that is wrong and cause the control valve to close.

DS 26,27

DO 013287
CONFIDENTIAL

DS 26/27 informs the operator that there is an AI/DI compar error. This means that the TWO computers are seeing DIFFERNT VALUES for the same variable.

The RIGHT computer is the only computer to see AI/DI compar error's. The alarm light will be pulsing on when the DS 7 light is off.

Most AI problems are a result of hardware problems on one of the two AI ACTIVE-105 PRINTED CIRCUIT BOARDS.

The Mod V system makes all compare errors off of the AIF and DIF tables not the AI and DI table.

In the event DS 26 /27 activates check the following;

1. Make sure that the RIGHT computer is the FOX computer.
If the right computer is the DOG computer. Do a list 1 function and change the RIGHT computer to the FOX.
2. Do a list 10 function for a print out of DI compare errors
3. Do a list 11 function for a print out of AI compare errors
4. Do a list 22 function for a print out of Ds alarm circuitry problems.
5. If the problem is an AI compare error, use the MCU panel to call up the AI in question on both cans.
6. Use the FOX/DOG switch and compare there values to try and determine which value is the bad one.
7. If you still not sure which computer is reading the bad value, call up the AIV table for the AI point and compare it's value using the FOX/DOG switch.
8. Compare the AIV value with an actual "VOLT METER" reading across the AI field wire screw terminals. This should determine which computer has the hardware problem.
(CONTACT INSTRUMENT PERSONNEL FOR THIS ITEM)
9. Once the bad AI board has been determined, the appropriate AI force table can be used to obtain the other computers correct values until the faulty board can be replaced.
10. If the problem is a DI compare error, follow the same procedure, except use the DI tables.

DO 013289
CONFIDENTIAL

DS 28 activates if one of the FIVE force tables has been selected through the MCU panel and is currently in use. IT IS PRIMARILY USED AS A REMINDER OR STATUS ALARM.

When you "FORCE" an "AI/DI" you are telling "BOTH COMPUTERS" to use the "FIELD VALUES" of the AI/DI obtained from "ONE" computer.

The "FORCE TABLES" are primarily used when a "FAULTY" AI/DI circuit board needs to be replaced while the MOD is running and without "HALTING" one of the two computers.

AI/DI force tables should only be used when absolutely necessary. If used watch the MOD V operation closely.

THE MORAL OF THIS STORY IS MAKE SURE THAT YOU UNDERSTAND HOW TO USE THE "FORCE TABLE" PROPERLY. IF YOU MAKE A MISTAKE AND "FORCE" IN THE WRONG DIRECTION, BOTH COMPUTERS WILL BE MAKING PROCESS CONTROL MISTAKES DUE TO BAD INFORMATION, POSSIBLY FROM A BAD AI/DI CIRCUIT BOARD.

DS 30

DO 013291
CONFIDENTIAL

The MOD system is powered by 120 volts AC during normal operations. If power is lost to the system, the mod is equipped with a 24 volt AC battery back up system which will run the system for approx 10 - 30 min.

DS 30 alarm lamp activates when the "BATTERY PACK" voltage is "LOW". The implication being that only a short time remains before the battery back up system is drained and the computers will come to a "HALT" and all valves will go to their fail safe position.

In the event DS 30 alarm lamp activates, do the following:

1. Attempt to confirm if it is real or not. It is possible to have a hardware problem that will cause a "FALSE ALARM". Check all other DS alarms relating to power loss (DS 17/18).
2. Check any other alarm that may have activated. (DS alarms or ALM 197-200)
3. Check to see if the alarm is "PULSATING" or is "CONTINUOUS". If the ALARM IS CONTINUOUS the problem is probably REAL. (If the alarm either comes on or goes off when DS 7 is lit, This could indicate a problem with just one of the cans). (SEE DS 7 WRITE UP).
4. Do a LIST 22 function to determine if there are any DS alarm circuitry problems.
5. There is no better way to confirm the problem than to read the BUS BAR volatge using a VOLT METER. (contact ELECTRICIAN FOR THIS PROCEDURE).
6. CONTACT MOD V HARDWARE PERSONNEL, ELECTRICIAN, INSTRUMENT PERSONNEL.

NOTE: All MOD V power problems should be viewed as serious, but remember that the loss of a single 28 volt charger should not jeopardize the process. The MOD V is fully capable of operating the process plant with one comput r if necessary.