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DO A 121129  
CONFIDENTIAL

| Node: 17 AGR-2001 OIL CIRCULATION |             |                                             |                                  |                                         |    |
|-----------------------------------|-------------|---------------------------------------------|----------------------------------|-----------------------------------------|----|
| Parameter: Temperature            |             |                                             | Intention: 100 - 110 F.          |                                         |    |
| GUIDEWORD                         | DEVIATION   | POSSIBLE CAUSES                             | CONSEQUENCES                     | RECOMMENDATIONS                         | BY |
| More                              | Higher Temp | NO COOLING<br>HEATER FAILURE<br>NO/LOW FLOW | SEAL FAILURE                     | DESIGN COOLING SYSTEM                   | GC |
|                                   |             |                                             |                                  | EVALUATE HEATER CONTROL SYSTEM          | GC |
|                                   |             |                                             |                                  | INSTALL TEMPERATURE ALARMS              | GC |
|                                   |             |                                             |                                  | PUT EXCHANGER ON THE PUMP DISCHARGE     | GC |
|                                   |             |                                             |                                  | HAZOP COOLING SYSTEM                    | GC |
| Less                              | Lower Temp  | HEATER FAILURE<br>COOLER IN SERVICE         | SEAL FAILURE<br>DAMAGE OIL PUMPS | TEMPERATURE ALARMS                      | GC |
|                                   |             |                                             |                                  | DETERMINE MINIMUM OPERATING TEMPERATURE | GC |
|                                   |             |                                             |                                  | EVALUATE INSULATION NEEDS               | GC |

Company: DOW CHEMICAL  
Process: POLY-B

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|                                   |                 |                 |              |                                           |    |
|-----------------------------------|-----------------|-----------------|--------------|-------------------------------------------|----|
| Node: 17 AGR-2001 OIL CIRCULATION |                 |                 |              |                                           |    |
| Parameter: Pressure               |                 |                 | Intention:   |                                           |    |
| GUIDEWORD                         | DEVIATION       | POSSIBLE CAUSES | CONSEQUENCES | RECOMMENDATIONS                           | BY |
| More                              | Higher Pressure |                 |              | DETERMINE PRESSURE RATING ON SEAL HOUSING | GC |