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Olympic Pipeline Control Center Events



National Transportation Safety Board

Timeline of Control Center Events 10 June 1999

3 PM

New
Records
Entered into
SCADA
Computer
OLY02

3:10

Computer
Error
Messages
Begin

3:17

Controller
Begins to
Change
Delivery
Points from
Renton to
Seattle

3:18

Computer
Becomes
Unresponsive

3:22

Pipeline
Begins To
Shut Down:
Bayview
Booster
Pump Goes
Down



Timeline of Control Center Events, continued

3:23

**Allen
Station
Pump
Shutdown
Manually**

3:24

**SCADA
Computer
OLY02
Taken Off
Line**

3:27-3:34

**SCADA
Computer
OLY01
On Line**

3:28

**Pipeline
Rupture**

3:35

**Controller
Requests
Arco Stop
Product
Flow**



Timeline of Control Center Events, continued

3:44

**SCADA
Computer
OLY02
On Line**

3:48

**SCADA
Computer
OLY02
Operational
After
Records
Deleted**

4:04

**SCADA
Computer
OLY01
Standby
Operational**

4:11

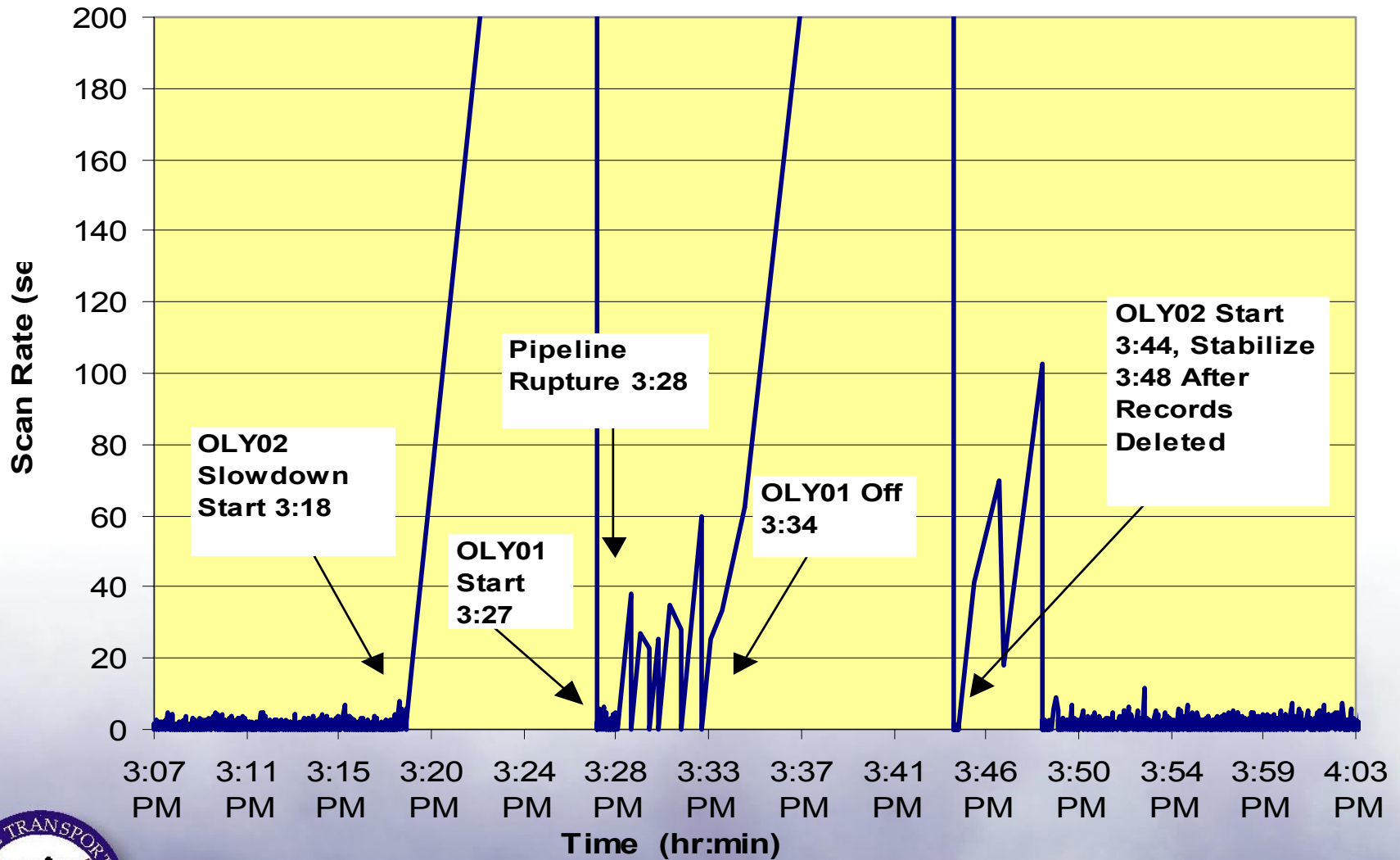
**Controller
Begins
Pipeline
Restart**

4:15

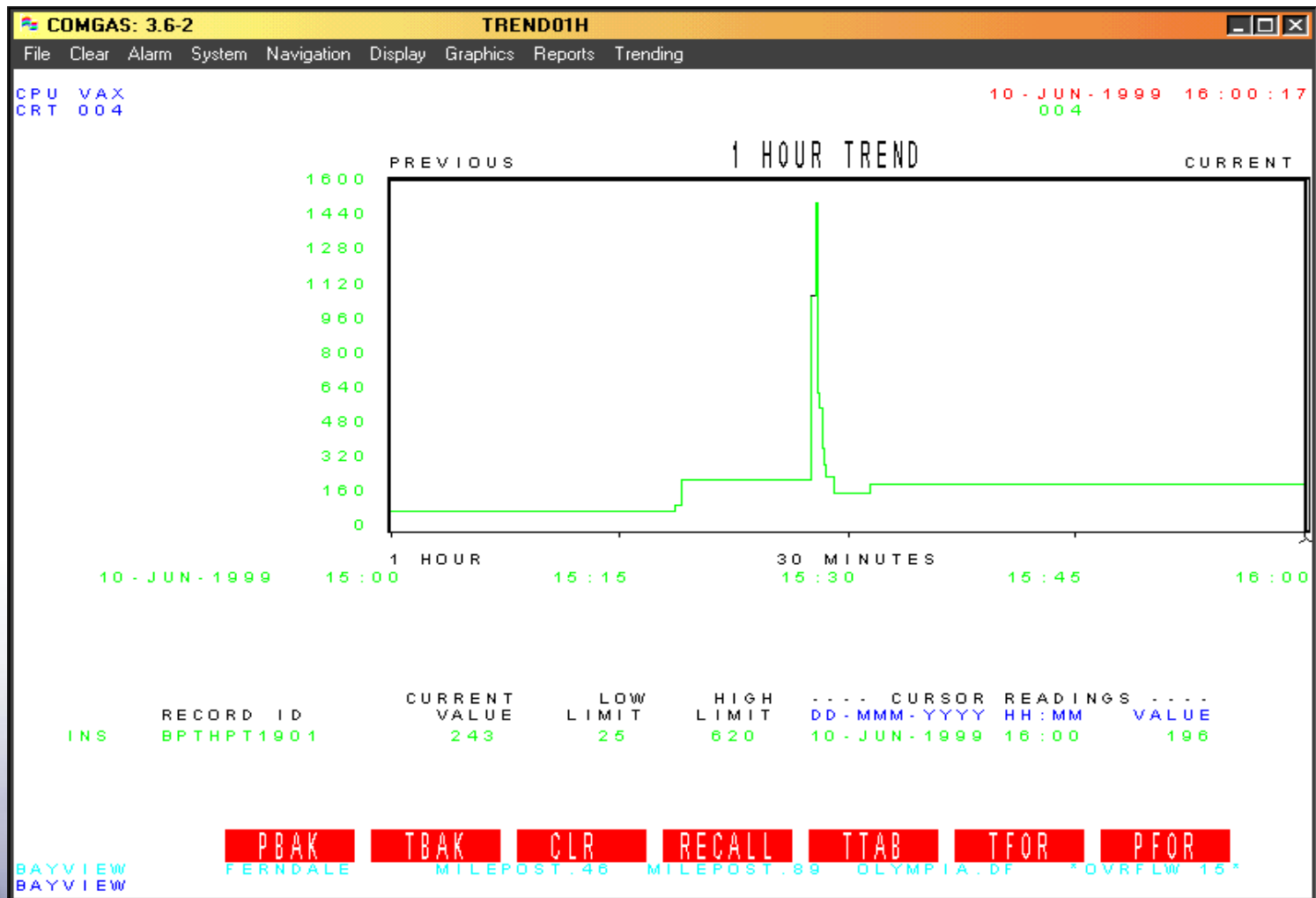
**Olympic
Requests
ARCO
Begin
Product
Flow**



Olympic Pipeline Primary Computer Scan Rate



Bayview Pressure Trend Data



Timeline of Control Center Events, Continued

4:29

**Leak
Detection
Alert**

4:30

**Call from
Arco
Asking
for Status**

4:31

**Telephone
Call to
Control
Center
Advising of
Gasoline in
Whatcom
Creek**

4:32

**Pipeline
Shutdown
Initiated**

4:35

**Olympic
Requests
Arco
Refinery Stop
Product Flow**

5:02

**Fire
Ignition**



Computer Operations

- **The system administrator in the computer room had no formal SCADA training.**



- **The system administrator should have notified his supervisor and the controllers when computer error messages first appeared.**
- **He should not have left the computer room until his supervisor became available.**



Computer Database Revisions

- **New records added to the primary on-line SCADA computer caused both computers to fail.**
- **These SCADA database revisions were performed without prior testing.**



- **SCADA computer changes should be implemented and thoroughly tested on an off-line system.**





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