Meters and condition monitoring — counters, limits and the work order a breach raises

Menu: CMMS ▸ Assets..., the tabs Meters and Condition

Part 1 — What the function does

What it does. Each asset of a CMMS file can carry meters, and each meter collects dated readings. In the window CMMS — Assets you

Action	What ReliaEn does
Add reading	Stores the value with its date. A continuous counter that rolls over at a fixed value is followed through the rollover
Read the tab Meters	Shows each meter's Kind, Rollover, Avg/day and, for a meter that drives a preventive maintenance (PM) schedule, the Forecast of its due date
Add point...	Sets a measurement point on a gauge meter, with up to four limits, and marks every reading OK, WARNING or ACTION
Generate work orders	Creates a work order for every point whose latest reading is in ACTION. The work is raised by the measured condition, not by the calendar

From what data. The meters of the asset and the readings you type. A meter has one of three kinds: continuous, a counter that only goes up; gauge, a level that rises and falls; characteristic, a state chosen from a short list.

When an engineer uses it. When counters and condition instruments are read on the plant, and the readings, the use between PM visits and the condition-based work orders are to be kept beside the asset.

Do not use it when

Situation	Use instead
The work falls due by the calendar	CMMS ▸ PM Calendar... (chapter 6.4)
The work orders should carry a task list	Write it in CMMS ▸ Job Plans... (chapter 6.5) and name it in Job plan / PM on the point
An operator reports a fault nobody has measured	CMMS ▸ Service Requests... (chapter 6.3)
You want one score from condition and failure history	CMMS ▸ Asset Health... (chapter 6.12)

Part 2 — The example's input data

Setting. A reliability engineer records a month of readings on pump P-101: its hour counter, which rolls over at 10,000 hours, and its vibration in mm/s. The last vibration reading is high.

The readings of Run hours, with Source manual:

Read at	Value
2026-09-01	9800
2026-09-11	9950
2026-09-21	100

2026-10-01	250

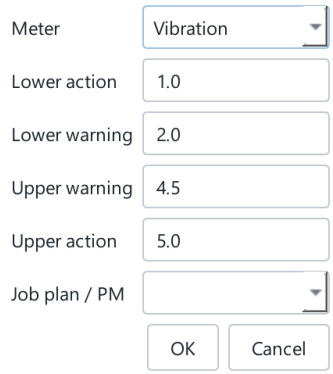
The readings of Vibration, with Source manual:

Read at	Value
2026-09-10	4.2
2026-09-20	3.9
2026-09-25	4.6
2026-10-01	5.1

The point on Vibration:

Input	Value
Lower action	1.0
Lower warning	2.0
Upper warning	4.5
Upper action	5.0
Job plan / PM	Left blank
File in the examples zip	6-Meters-JobPlans-ServiceRequests/ReliaEn-6-Meters-JobPlans-Requests-plant.reliaen: P-101 with the meters Run hours, Vibration and Oil condition, no readings yet. Work on a copy

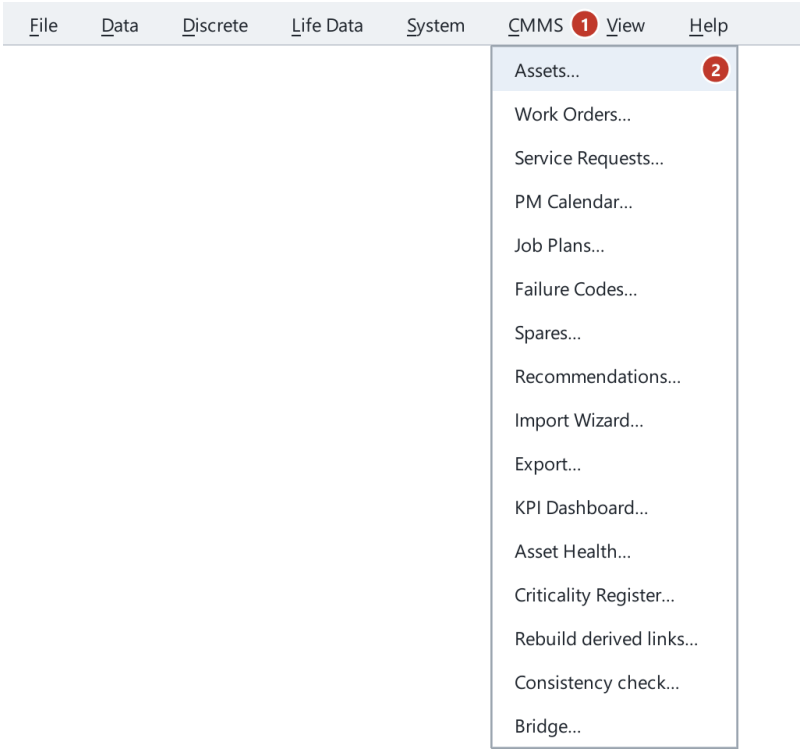
The dialog Add point... with the limits typed:



The dialog Add point...

Part 3 — How to use it, step by step

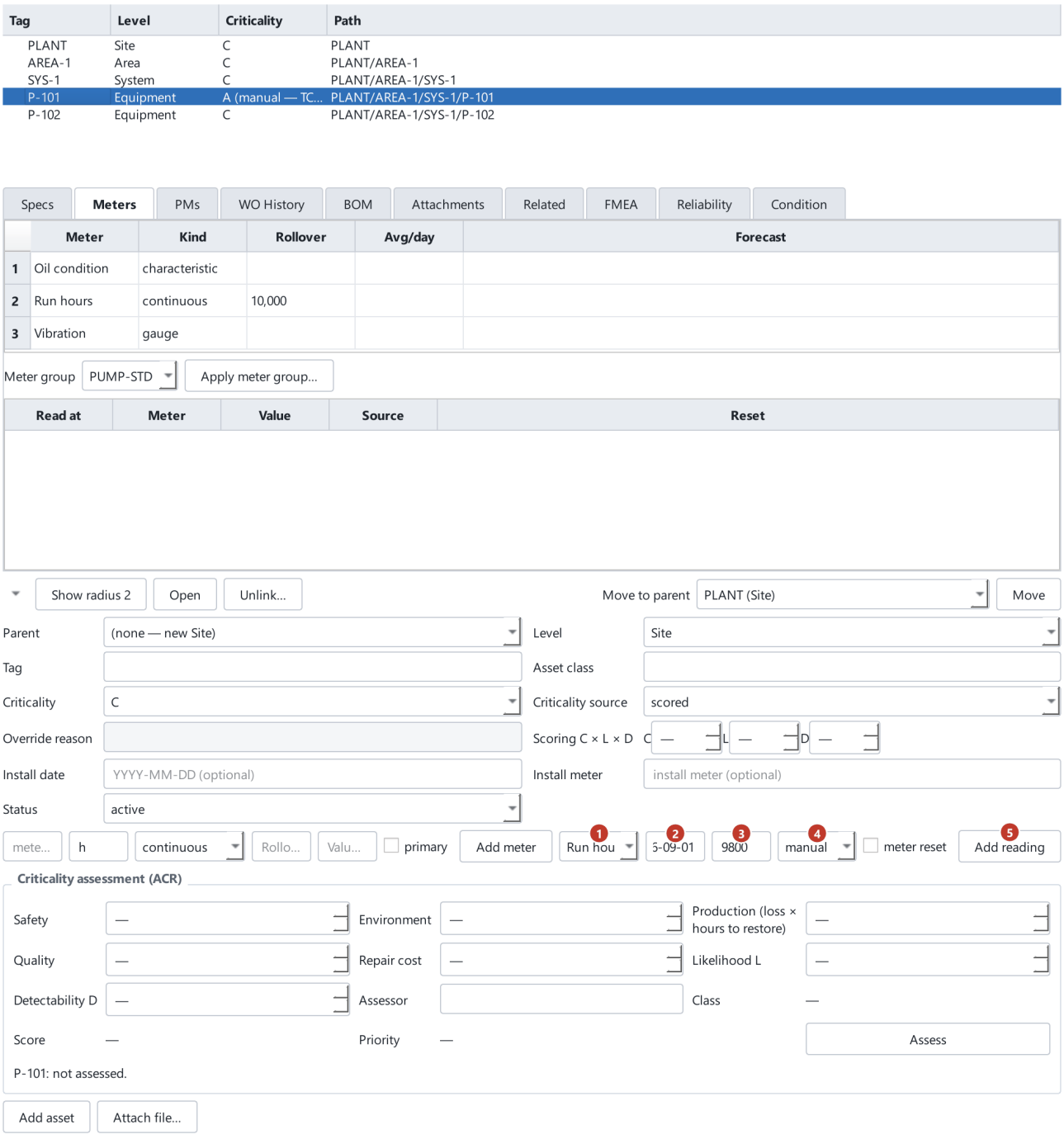
1. **Open a copy of the example's CMMS file, then choose CMMS ▸ Assets...** in the menu bar. The window CMMS — Assets opens.



Step 1 — the menu path

- ① CMMS: the menu.
- ② Assets...: the entry to click.

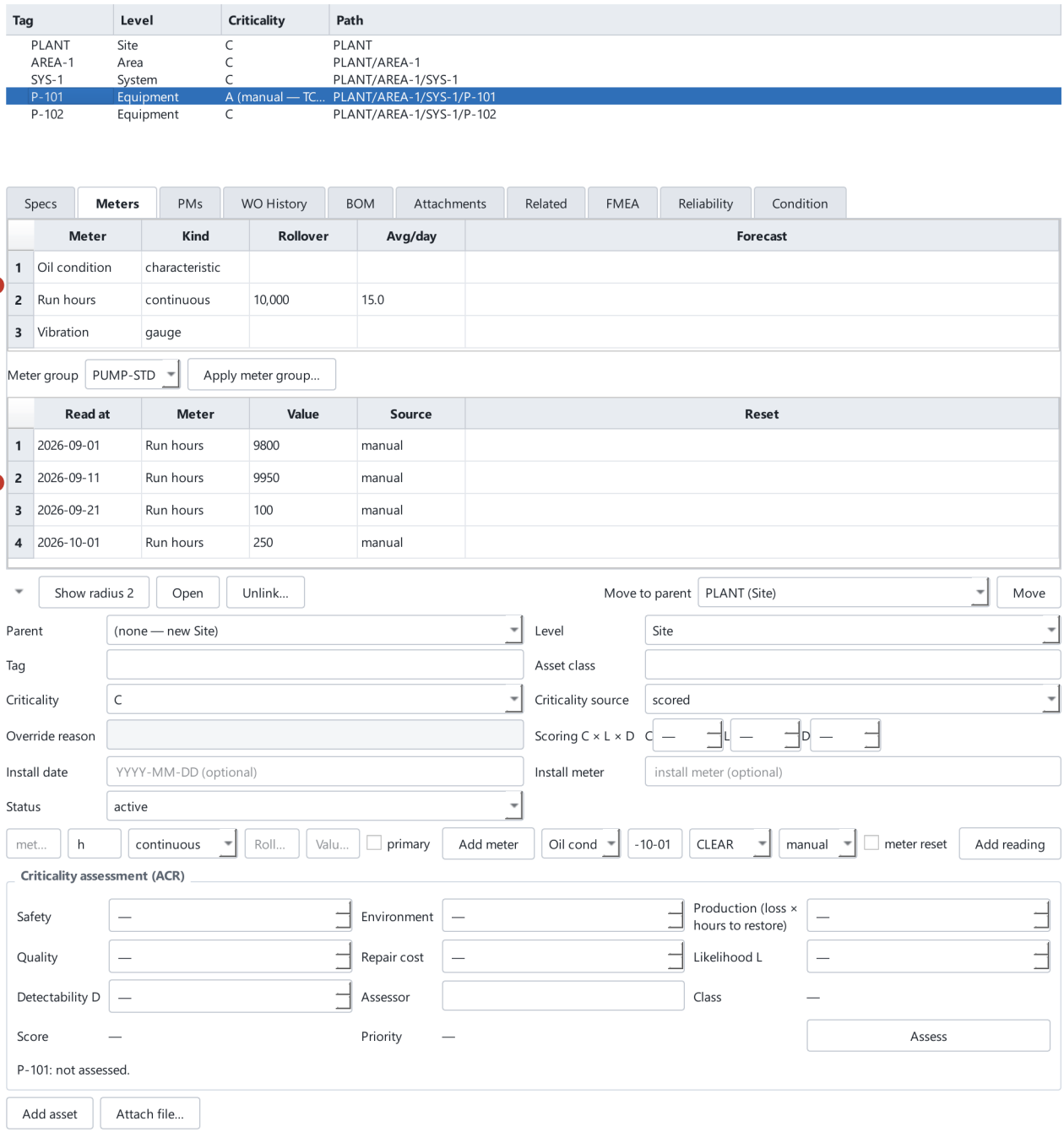
2. **Select P-101 in the tree and open the tab Meters.** The reading boxes sit in the row under Status. Steps 3 to 7 type the first reading:



Steps 3 to 7 — the first reading typed

3. ① **In the meter box, choose Run hours.**
4. ② **In the date box, type 2026-09-01.**
5. ③ **In the value box, type 9800.**
6. ④ **Check that the source box reads manual.**
7. ⑤ **Click Add reading.**
8. ①②③⑤ **Add the other three Run hours readings the same way.** After each Add reading the window reloads: the tabs move to Related and the meter box returns to its first meter, so choose Run hours again each time.

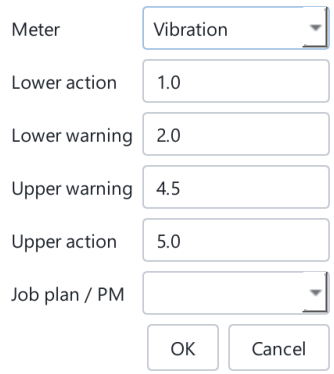
9. **Open the tab Meters:**



Step 9 — the tab Meters after the four readings

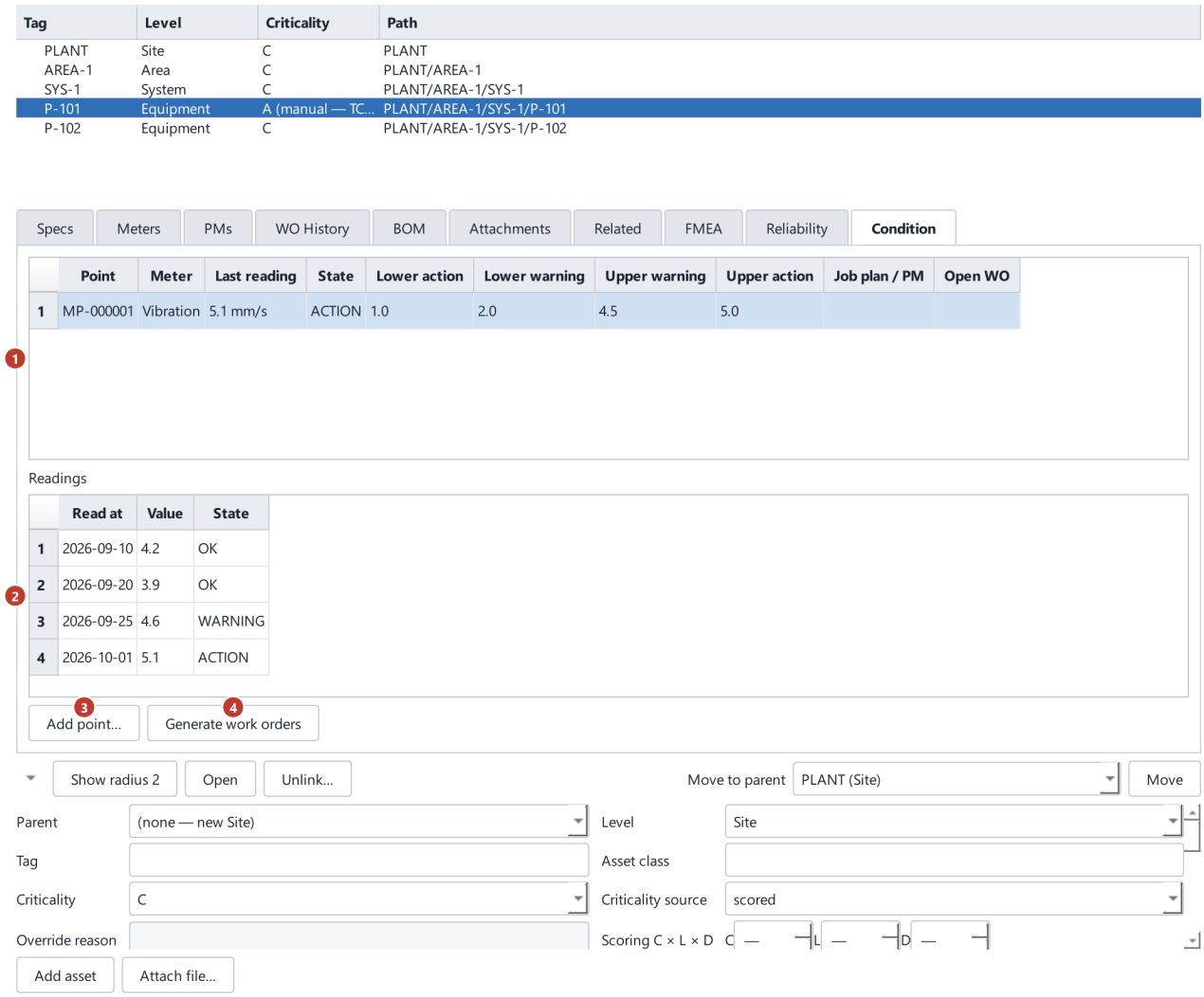
- ① The meter table.
- ② The readings.

10. **Add the four Vibration readings the same way, choosing Vibration in the meter box. Open the tab Condition, click Add point..., choose Vibration in Meter and type the four limits of Part 2:**



Step 10 — the limits typed

11. **Click OK, and select the new point in the table:**

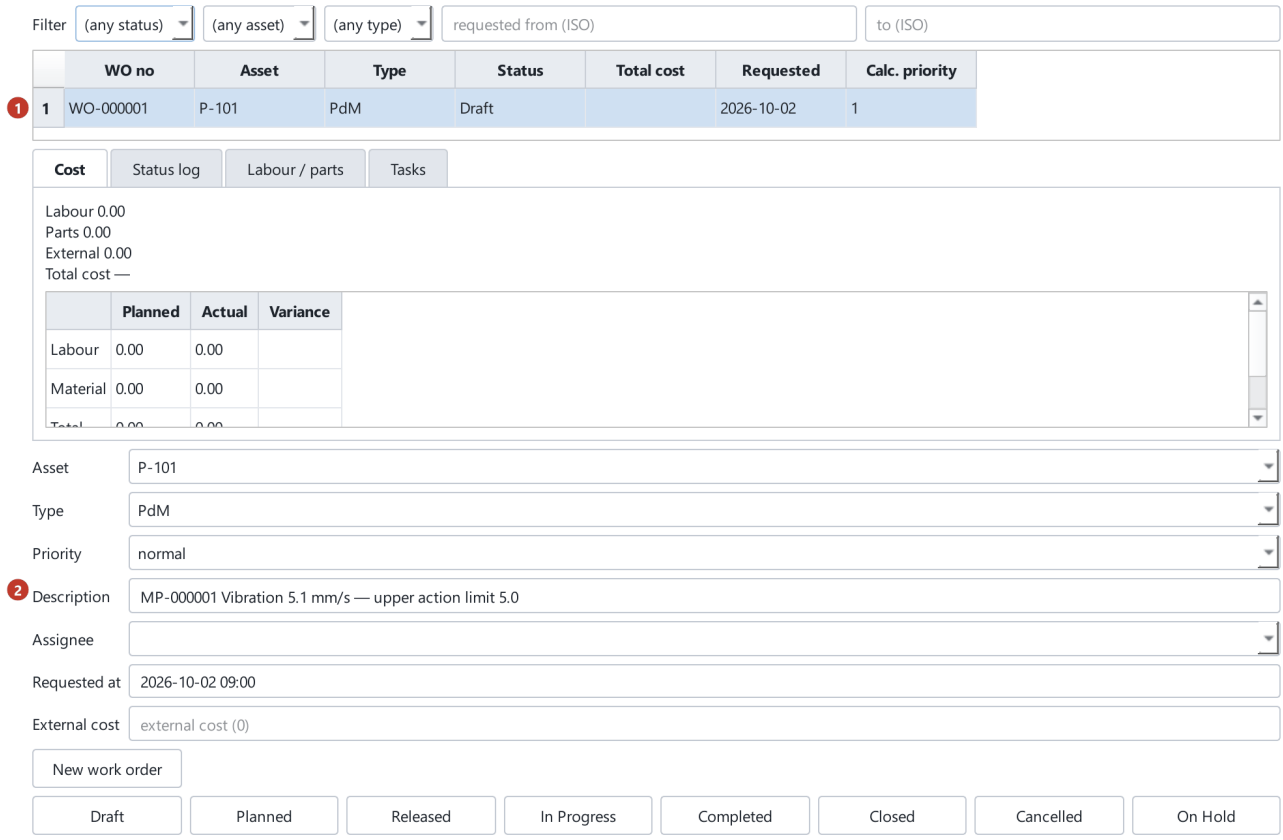


Step 11 — the tab Condition, the point selected

- ① The measurement points.
- ② The readings of the selected point.
- ③ Add point....
- ④ Generate work orders.

12. ④ **Click Generate work orders.** The result line appears beside the button.

13. **Close the window, choose CMMS ▸ Work Orders… and select the new order:**

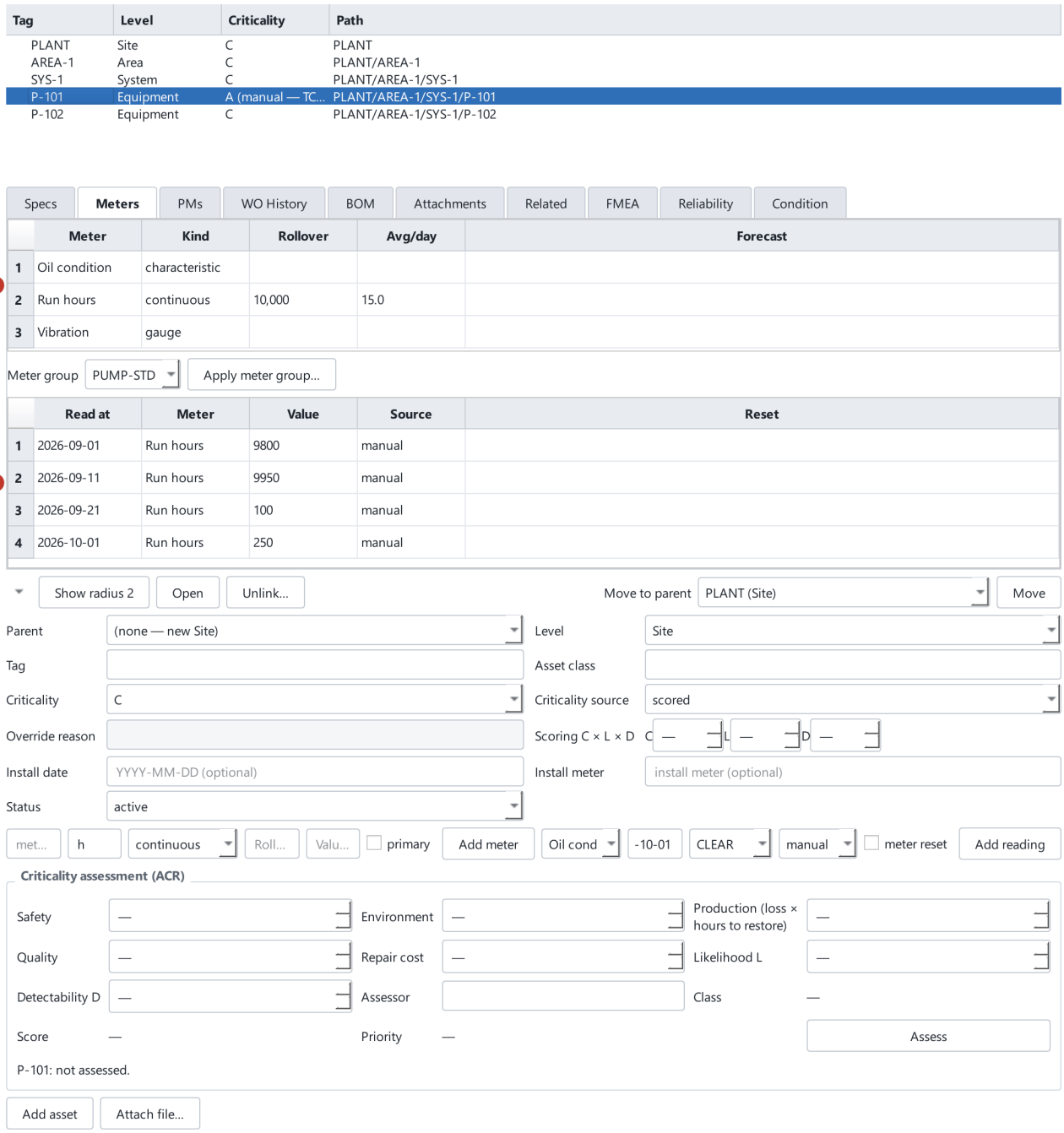


Step 13 — the order in Work Orders

- ① The order.
- ② Its Description.

Part 4 — The result, picture by picture

The tab Meters after the four Run hours readings:

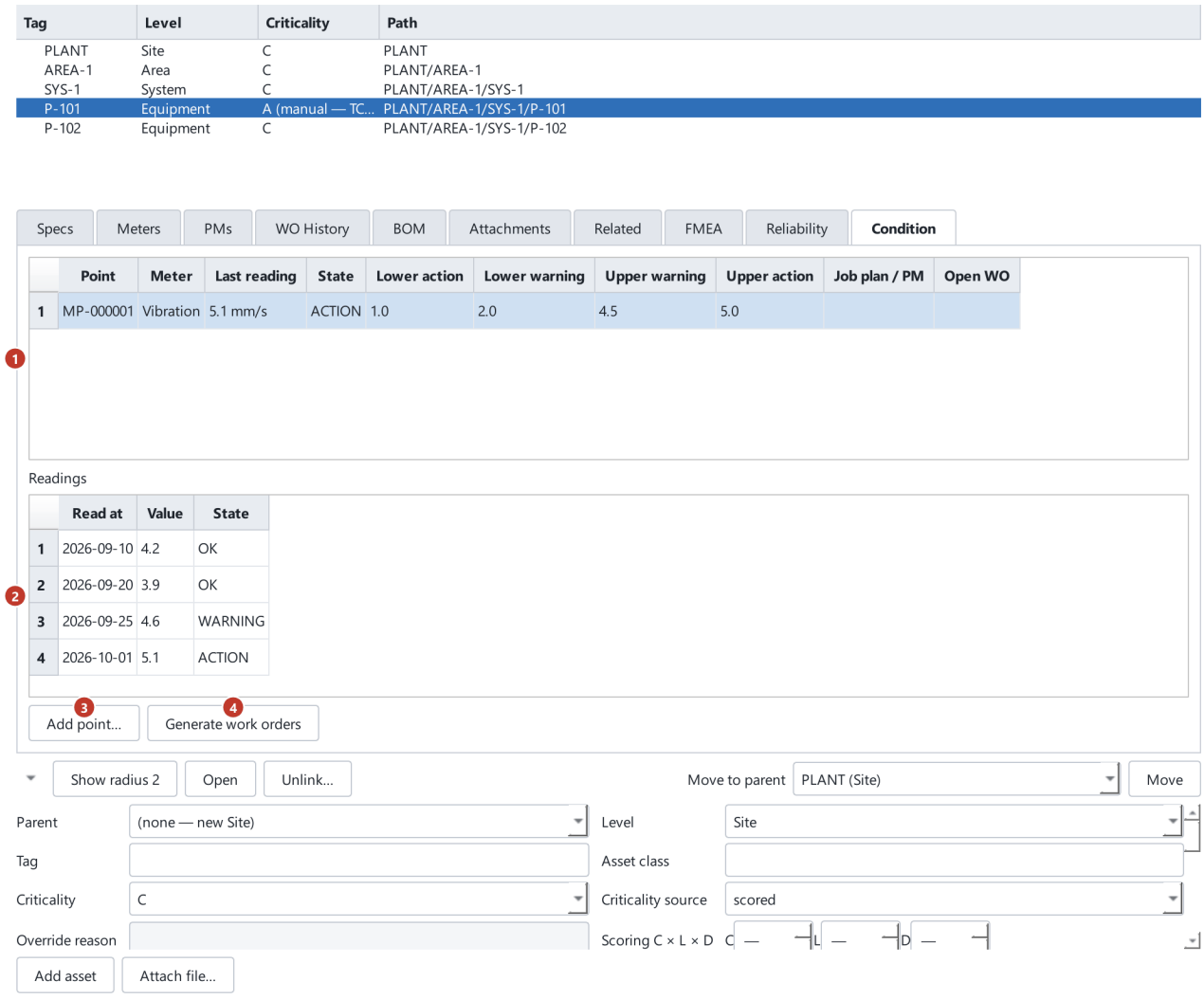


The tab Meters

- ① Run hours is continuous, with Rollover 10,000 and Avg/day 15.0: the use between the readings is 150, 150 and 150 hours, 450 hours over the 30 days from 2026-09-01 to 2026-10-01. Forecast is blank because no PM schedule runs on this meter. Oil condition and Vibration have no Avg/day: that column belongs to continuous meters.
- ② The four readings as typed, Source manual. Reset is empty: the drop from 9950 to 100 is the counter rolling over, and its use is 10,000 − 9,950 + 100 = 150 hours.

What to decide. No message appeared, so the drop was read as a rollover. Tick meter reset only when the counter itself has been replaced. At 15 hours a day, the pump runs about 450 hours a month: use that figure to plan work by running hours.

The tab Condition with the point selected:

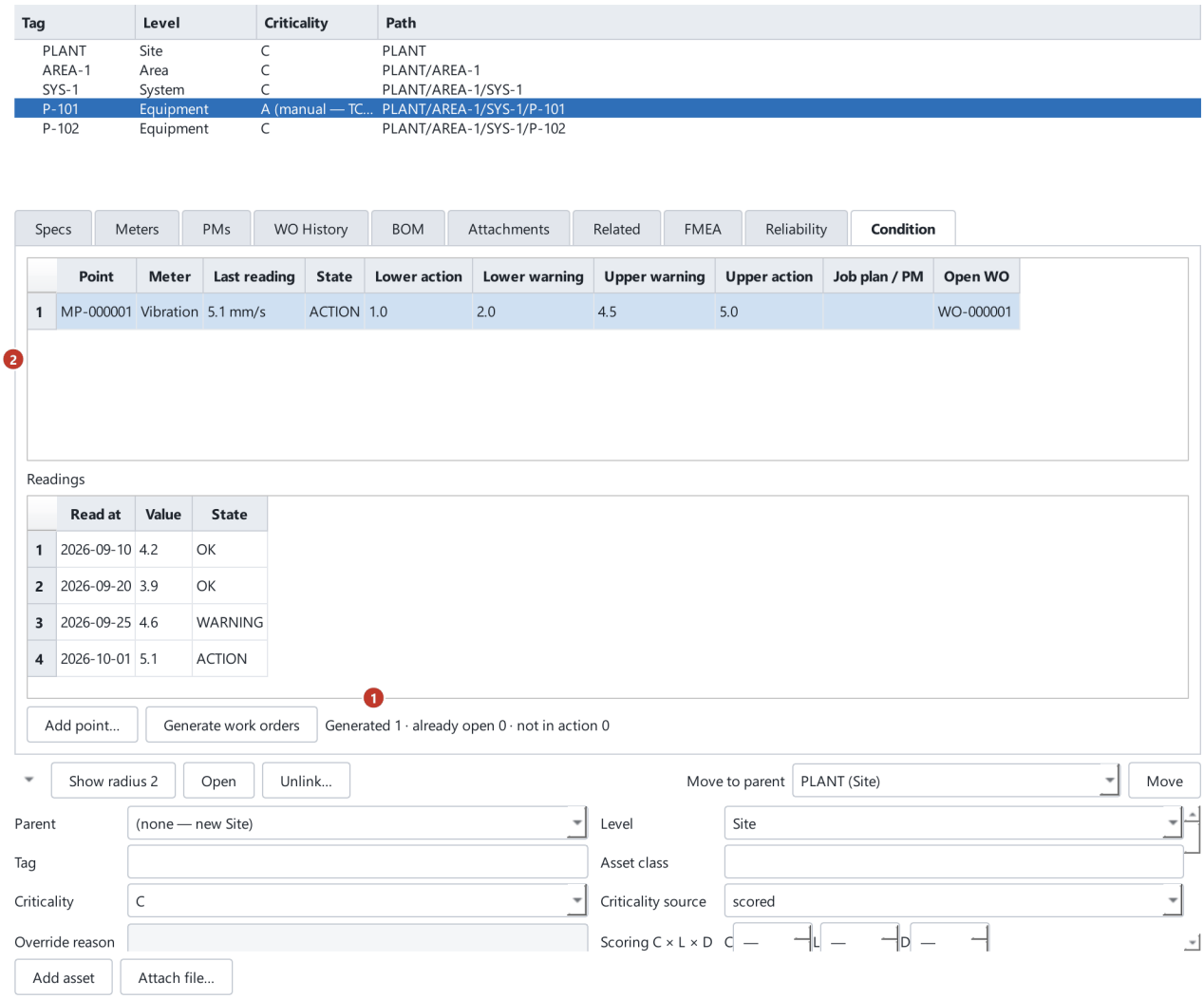


The tab Condition

- ① Point MP-000001 on Vibration: Last reading 5.1 mm/s, State ACTION, the four limits as typed, Job plan / PM and Open WO empty.
- ② Each reading against the limits: 4.2 and 3.9 are OK, between 2.0 and 4.5; 4.6 is WARNING, at or above 4.5; 5.1 is ACTION, at or above 5.0.
- ③ Add point...: a further point on another gauge meter.
- ④ Generate work orders: not pressed yet.

What to decide. The trend rose from 3.9 to 5.1 mm/s in eleven days. A WARNING is the time to look; ACTION is the point at which the work should be raised.

After Generate work orders:

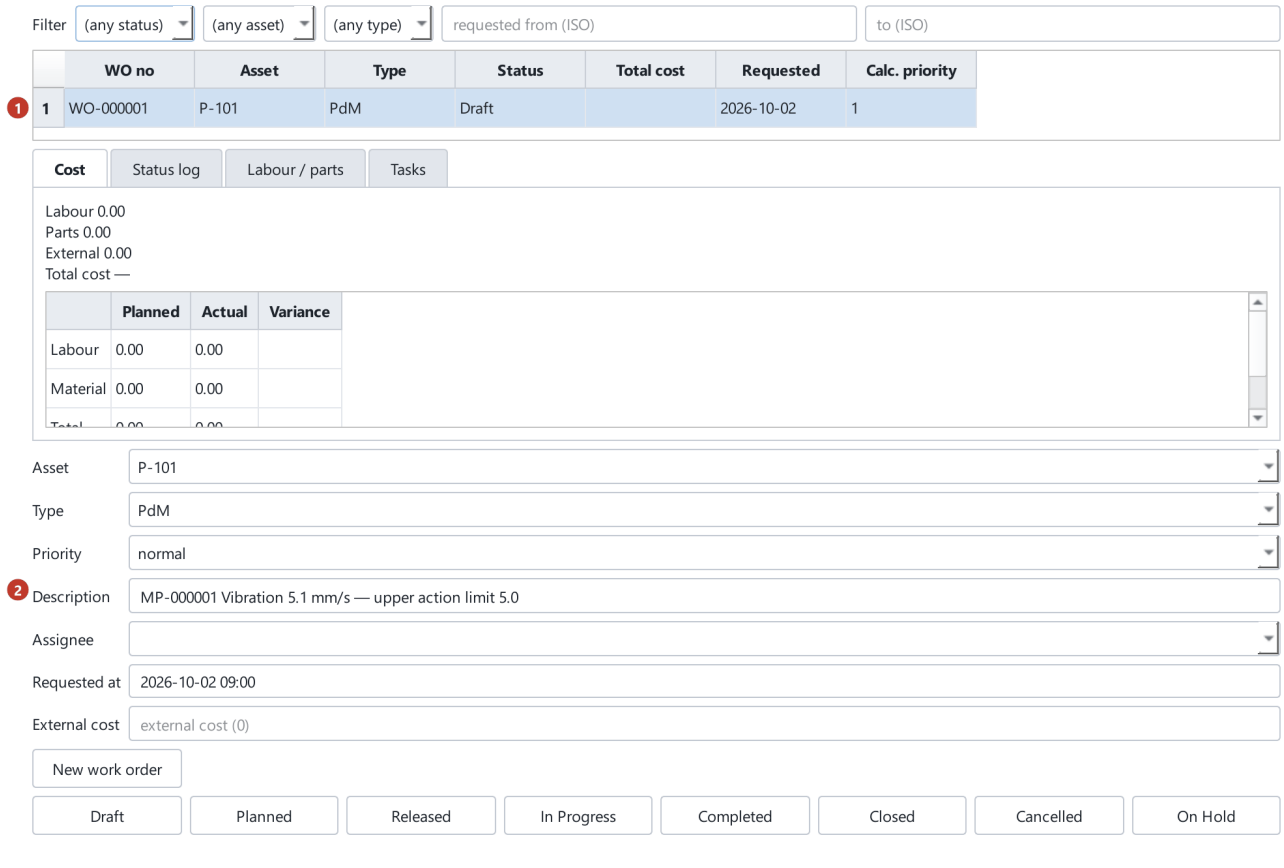


The result of Generate work orders

- ① The result line: Generated 1 · already open 0 · not in action 0.
- ② Open WO now names WO-000001.

What to decide. Read all three counts. Generate work orders looks at every point of the CMMS file, not only those of the asset on screen, so an order may be raised on another asset.

The order in CMMS ▸ Work Orders…:



The order the breach raised

- ① WO-000001 on P-101: Type PdM, predictive maintenance, Status Draft, requested 2026-10-02, the day the button was pressed.
- ② Description MP-000001 Vibration 5.1 mm/s — upper action limit 5.0: the point, the meter, the reading and the limit crossed. Priority is normal.

What to decide. The order has no tasks and no planned labour, because the point names no job plan. Add them, or name a job plan on the point before generating, then take the order forward as in chapter 6.2.

Part 5 — How to interpret the results

Avg/day is the meter's use, not its value. It is the use over the last ten readings, or all of them when there are fewer, divided by the days between the first and the last of them. It stays blank until a meter has two readings.

A rollover meter accepts every lower reading. On a continuous meter with a Rollover, a mistyped low value is not refused: it is taken as the counter rolling over, and Avg/day jumps. If Avg/day looks too high, check the last reading first. On a continuous meter without a rollover, a lower reading is refused unless meter reset is ticked.

Forecast needs a PM schedule. It is blank here. With a PM schedule triggered by the meter, it shows the expected due date, or OVERDUE when nothing remains.

The state of a point is the state of its latest reading. A reading at or above Upper action, or at or below Lower action, is ACTION; at or beyond a warning limit, WARNING; otherwise OK. A later reading back inside the limits clears ACTION, and no order is generated for it.

Pressing Generate work orders again does not duplicate. While WO-000001 is open, the line reads Generated 0 · already open 1 · not in action 0. Once the order is Closed or Cancelled, the next press raises a new one if the point is still in ACTION; a Completed order still counts as open.

The description keeps the language of its moment. The order's text is written once, in the language the application had when it was generated, and does not change afterwards.