adjustment unit 20B. The reference value adjustment unit 20B compares the membrane maintenance condition input from the membrane maintenance condition input unit 19 with the replacement cycle as the calculation result.

[0078] FIG. 9 is a diagram for explaining the replacement cycle calculated by the operation support device according to the second embodiment without changing the operating condition. FIG. 9 depicts the correspondence relationship between the initial value of the blower output that is the output of the blower 22X, the initial value of "a" in Formula (1), the initial value of "b" in Formula (2), the initial value of "d" in Formula (5), the initial cleaning reference value, the initial replacement reference value, the replacement cycle, and the pattern operation cost. Note that in FIG. 9 and FIGS. 10, 13, and 14 described later, the cleaning reference values and replacement reference values are expressed in percentage.

[0079] As illustrated in FIG. 9, if the water treatment facility 23B is operated with the initial value of the blower output, the replacement cycle is 44 days, which is shorter than 51 days specified by the maintenance condition. That is, because the replacement cycle calculated with the initial value of the blower output is shorter than the replacement cycle specified by the maintenance condition, the initial value of the blower output does not satisfy the maintenance condition. In this case, the reference value adjustment unit 20B creates the accumulation model D2 and the power consumption model D7 for the case of increasing the blower output. The reference value adjustment unit 20B creates a new accumulation model D2 by updating "b" in Formula (2) and creates a new power consumption model D7 by updating "d" in Formula (5).

correspondence relationship between the initial value of the blower output that is the output of the blower 25, the initial value of “a” in Formula (1), the initial value of “d” in Formula (5), the initial cleaning reference value, the initial replacement reference value, the replacement cycle, and the pattern operation cost.

[0101] As illustrated in FIG. 13, if the water treatment facility 23C is operated with the initial value of the blower output, the replacement cycle is 40 days, which is shorter than 51 days specified by the maintenance condition. That is, because the replacement cycle calculated with the initial value of the blower output is shorter than the replacement cycle specified by the maintenance condition, the initial value of the blower output does not satisfy the maintenance condition. In this case, the reference value adjustment unit 20C creates the predicted water quality value D1 and the power consumption model D7 for the case of increasing the blower output. The reference value adjustment unit 20C creates a new predicted water quality value D1 by updating “a” in Formula (1) and creates a new power consumption model D7 by updating “d” in Formula (5).

[0102] The reference value adjustment unit 20C inputs the predicted water quality value D1 for the case of increasing the blower output to the sewage information input unit 2, and inputs the power consumption model D7 for the case of increasing the blower output to the power consumption model input unit 6. Then, the computation unit 1 recalculates the minimum reference value pattern.

[0103] In this way, the operation support device 100C repeatedly recalculates the minimum reference value pattern while updating models, and determines the predicted water quality value D1 or the power consumption model D7 that can