



WATER QUALITY NON-COMPLIANCE & INCIDENT MANAGEMENT

NAIDOO AND BUNGU, 19 APRIL 2023



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Introduction



Introduction

- a. Risk Management = requirement for good practice = enable risks to be identified & mitigated on proactive basis
- b. Reality = some things don't go to plan → non-compliances → incidents
- c. Non-compliances and incidents root causes:
 - i. Raw water quality changes
 - ii. Inadequate capability of infrastructure
 - iii. Inadequate operation of supply system
 - iv. Inadequate maintenance of supply system
 - v. Breakdown of infrastructure





Current Situation



Current situation

- a. Each organisation (Rand Water and municipality (x16)) has their own non-compliance and incident management procedure/process/protocols...developed independently.
- b. Disadvantages / weaknesses of this situation:
 - i. Procedure/process/protocols not necessarily aligned
 - ii. Communication with media/public fragmented → confusion amongst consumers
 - iii. Blame game between Rand Water and municipalities → no clearly defined roles
- c. Rand Water current protocol:

Following items will be discussed

 - i. Principles
 - ii. Reactive process
 - iii. Proactive process



PRINCIPLES of the RW protocol

- a. Applicable to the Rand Water supply system (abstraction, treatment plants up to points of delivery to the municipalities)
- b. Protocol provides for:
 - **Reactive responsive management of events**
 - **Proactive management of situations**



PRINCIPLES of the RW protocol

- a. The Rand Water protocol makes provision for situation management → situations have the potential to lead to an event.

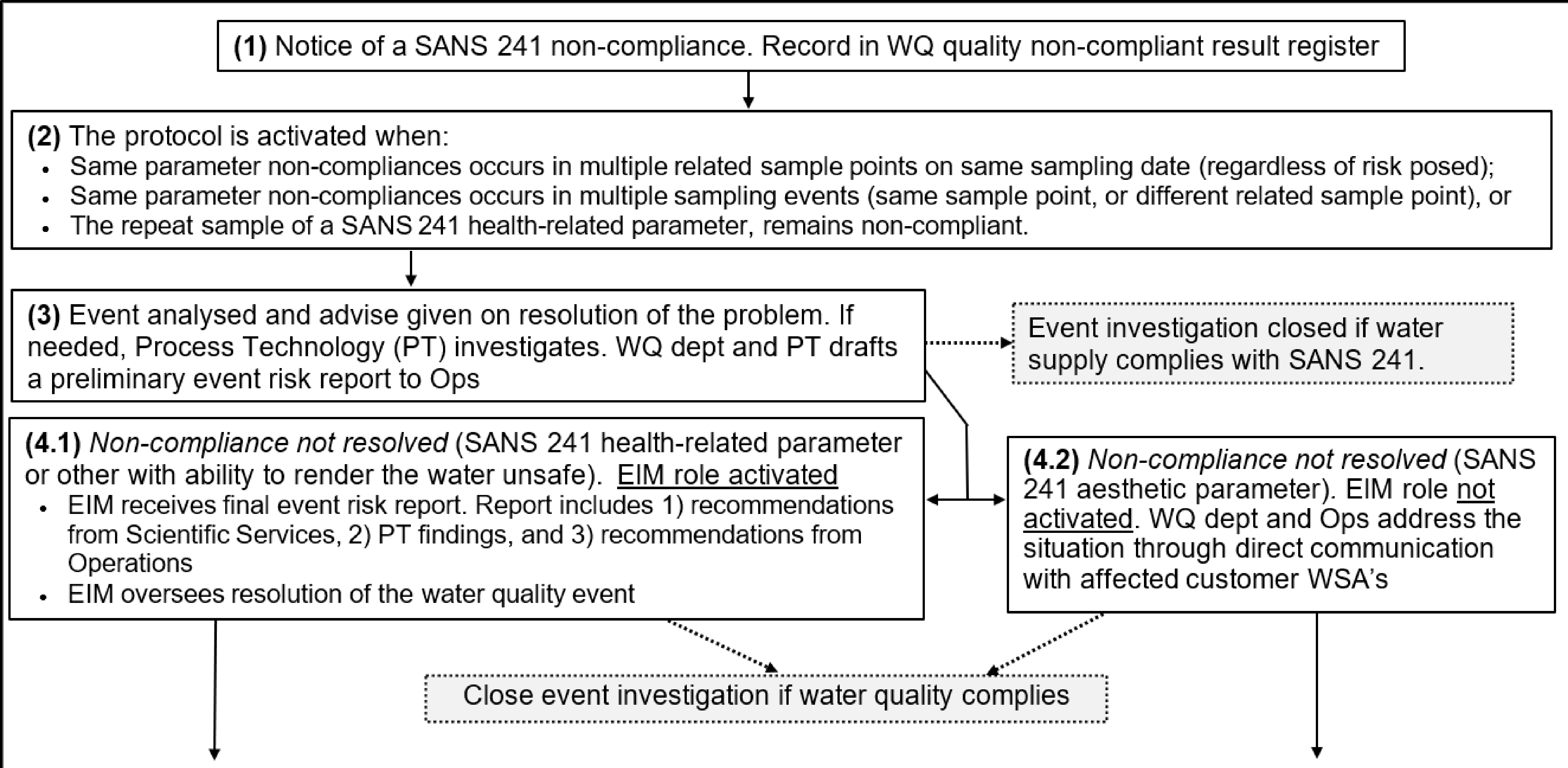
Situations are conditions in the catchment, treatment, and/or the RW distribution network (including booster sites) when:

- * something undesirable is occurring or about to occur,
- * something is being changed,
- * something has failed,
- * or a decommissioned aspect of the main water supply system is to be recommissioned

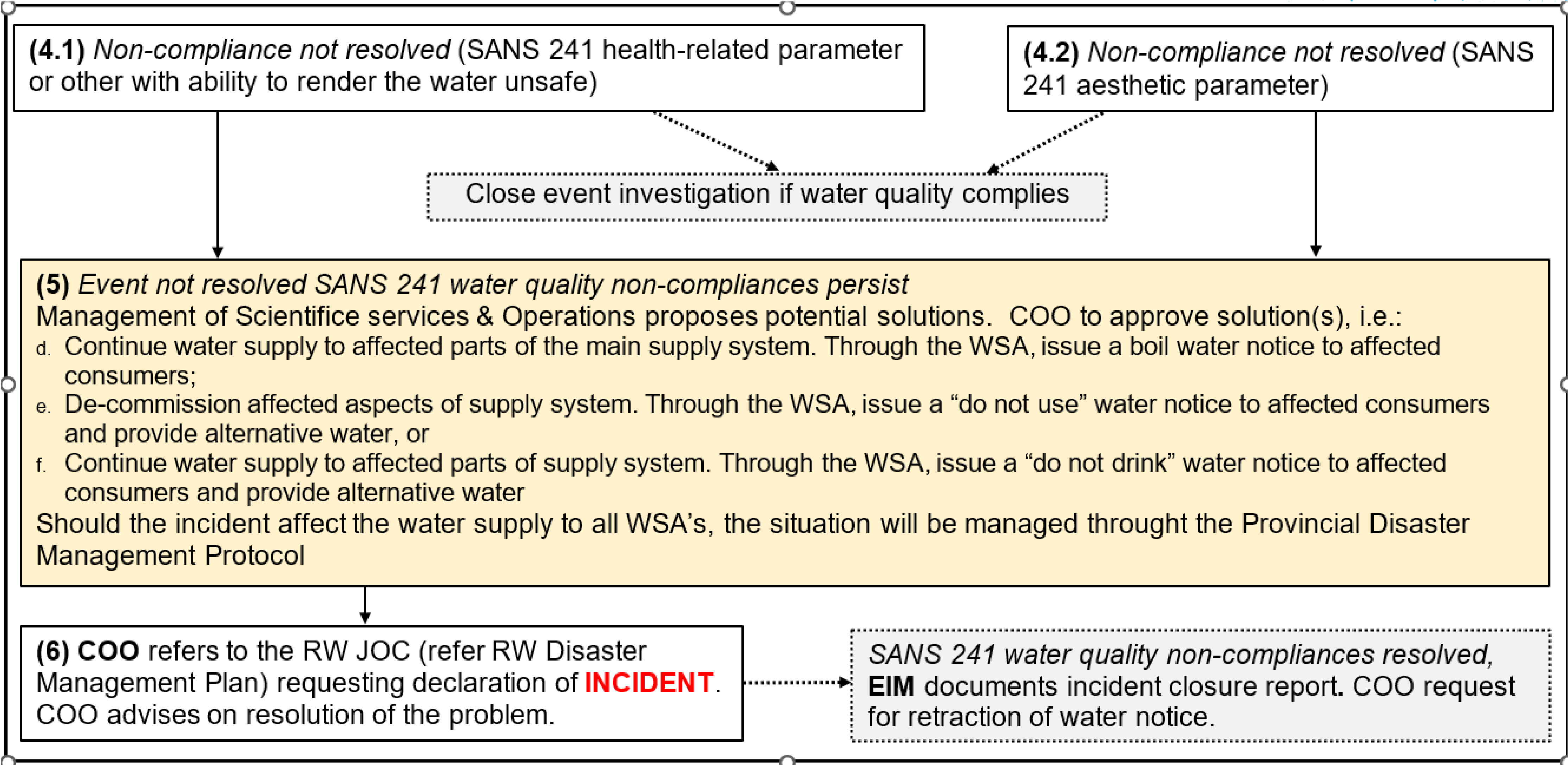
- a. Events are short term SANS 241 non-compliances with the ability to affect the drinking water quality to the extent that the drinking water may become unsafe **if the event is sustained for an extended period.**

- b. An incident is long term sustained SANS 241 non-compliances that are likely to give rise to unacceptable risk to the health of the consumers.

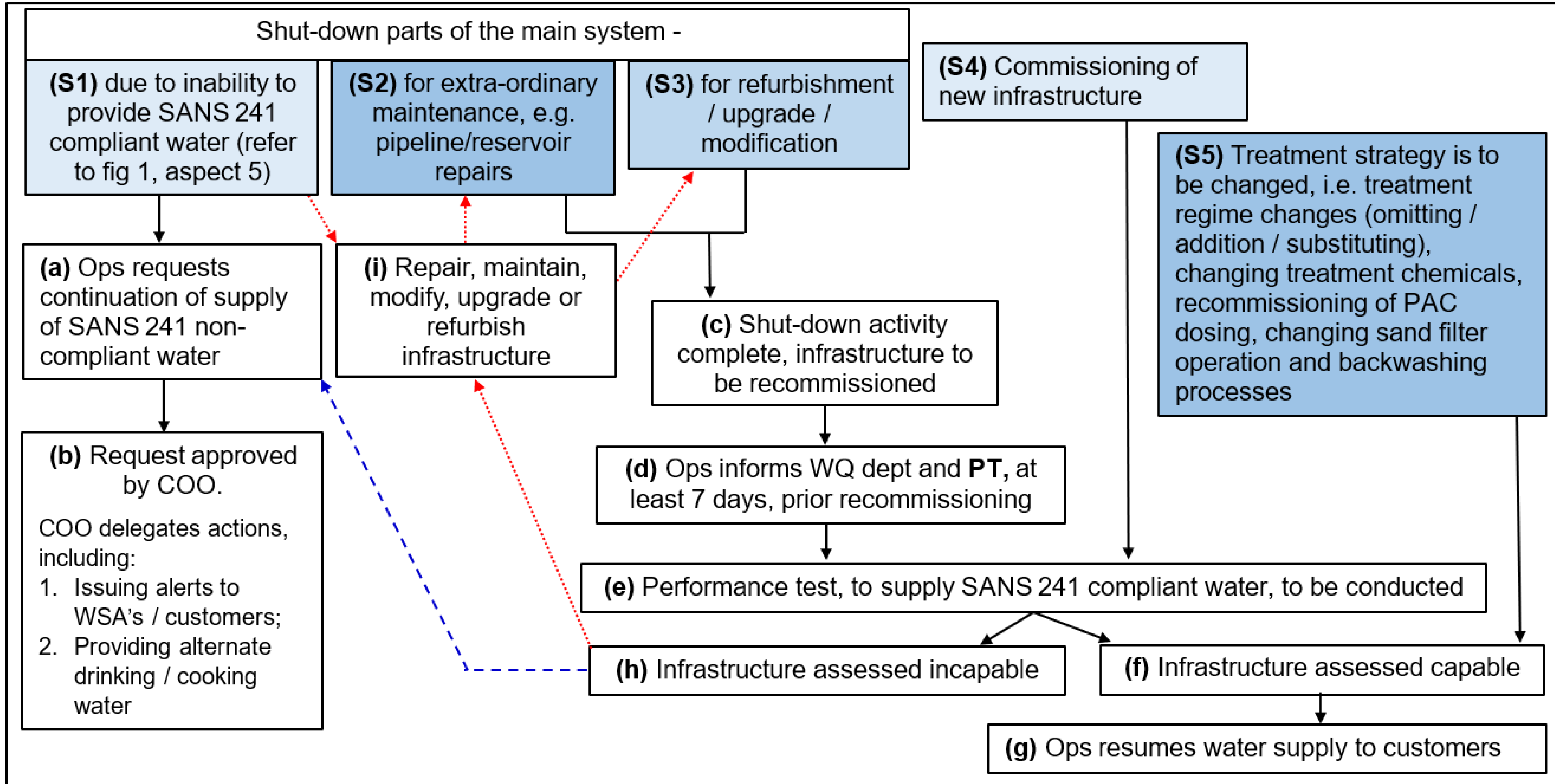
Reactive/responsive management of events (SANS 241 non-compliances)



Reactive / responsive management of events (SANS 241 non-compliances) (slide 2)



Proactive management of events (SANS 241 non-compliances)



Current situation

- a. Incident Manager – situation that calls for this role (and function) to be evoked (pre-defined) at the appropriate time.
- b. The current Rand Water protocol does not address operational actions. Operational actions are seen as “something” that the accountable party can resolve via their procedures/processes. Examples = correcting chemical dosages, fixing infrastructure leaks.
- c. The current Rand Water protocol requires the establishment of a water quality result non-compliance register and documentation of corrective actions for the various operational units.
- d. The current Rand Water protocol is not a “menu” type procedure/process...it requires analyses of data/information by competent professionals...and decision making by competent professionals.
- e. The current Rand Water protocol requires decision making by the COO to progress from non-compliant water results to an incident.





Future Situation



Future situation

a. Anticipated requirements of the new SANS 241

- i. Desired outcome = supply safe water to consumers → upstream WQ criteria to be appropriately defined
- ii. Differentiation between non-compliance result management vs incident management
- iii. Non-compliance result management:
 1. Sporadic
 2. Manageable by optimising operations
 3. Short term non-compliances
 4. Corrected with operational procedures by relevant accountable party
- iv. Incident management:
 1. Sustained long term non-compliances
 2. Health impact
 3. Aesthetic impact
 4. Requires data/information analyses by competent professionals
 5. Requires decision making by competent professionals
 6. Resolution of incidents not “menu” driven but by competent professionals

Future situation

b. Rand Water intentions:

- i. Establishment of joint IMPs between Rand Water and municipalities
- ii. IMPs Scope = raw water abstraction + Rand Water treatment plants + Rand Water bulk distribution network + municipality retail distribution networks
- iii. Catchment management is not Rand Water accountability:
 1. Rand Water responsibility = being knowledgeable of water quality risks in the catchment
 2. Rand Water responsibility = inform and encourage DWS/CMA to mitigate water quality risks arising in the catchment
 3. Rand Water responsibility = Implement water quality risk mitigation measures in the treatment plant and its bulk distribution network



Future situation

b. Rand Water intentions continued:

- iv. Establish joint incident management team between municipality and Rand Water
- v. Establish integrated water quality risk assessments between municipalities and Rand Water
- vi. Establish optimised integrated water quality monitoring programs between municipalities and Rand Water
- vii. Establish common “real time” water quality / information database:
 1. populated by both municipalities and Rand Water
 2. record of “real time” data / information
 3. non-compliant data with corrective action information



Future situation

b. Rand Water intentions continued:

- viii. Establish common water quality assessment processes
- ix. Establish integrated communication processes (proactive and reactive) and content communication with consumers





Way forward



Way forward

- ❑ Rand Water will interact with all its customer municipalities to establish the integrated Incident Management Protocol

First step = establish jointly agreed IMP principles document

Second step = establish IMP based on the principle's document

- ❑ Going forward, joint management of water quality non-compliances / incidents



Thank you!

Questions and Answers

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