User feedback for Evolution of ISOE Database

KYOTO 2018.10.24

NSRA/ISOE/ATC/ H. Tezuka, K. Honjo

CONTENTS

1. Present state of ISOE database
2. Actions and Proposal from ATC secretariat
3. Some dose analysis based on ISOE Database
4. Some User feedback
5. Conclusion

1. PRESENT STATE OF ISOE DATABASE

- ISOE Database; history of more than 25 years
  - Data from over 400 utilities in 29 countries
  - Huge volumes of dose data stored in since 1992
  - Low frequency of use by Japanese participants
    … Why?

2. ACTIONS & PROPOSAL FROM ATC SECRETARIAT (1)

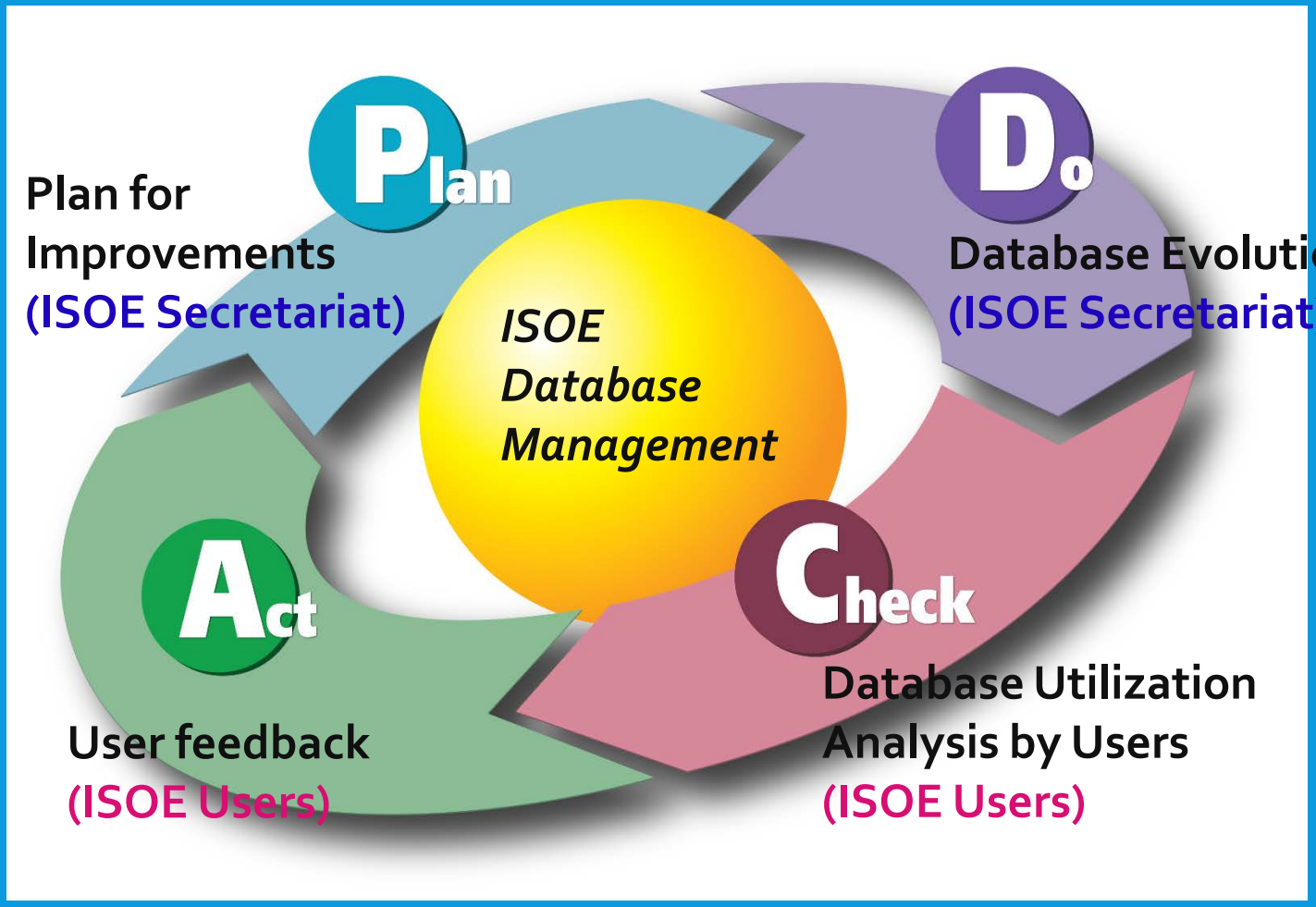
- Missions of ATC Sec.;
  - ✓ Management of ISOE Database;
  - ✓ Management of Meetings and Participation;
  - ✓ Information Exchange through ISOE Network; …

  In a word, to serve ISOE Japanese Members under ISOE activities

- Current ATC Sec. Concern; low frequency of database use

2. ACTIONS & PROPOSAL FROM ATC SECRETARIAT (2)

Remind PDCA cycle for Evolution!



2. ACTIONS & PROPOSAL FROM ATC SECRETARIAT (3)

- ATC Sec. Actions
  - Carryout some dose analysis as trials
  - Provide some proposal for ISOE evolution

2. ACTIONS & PROPOSAL FROM ATC SECRETARIAT (4-1)

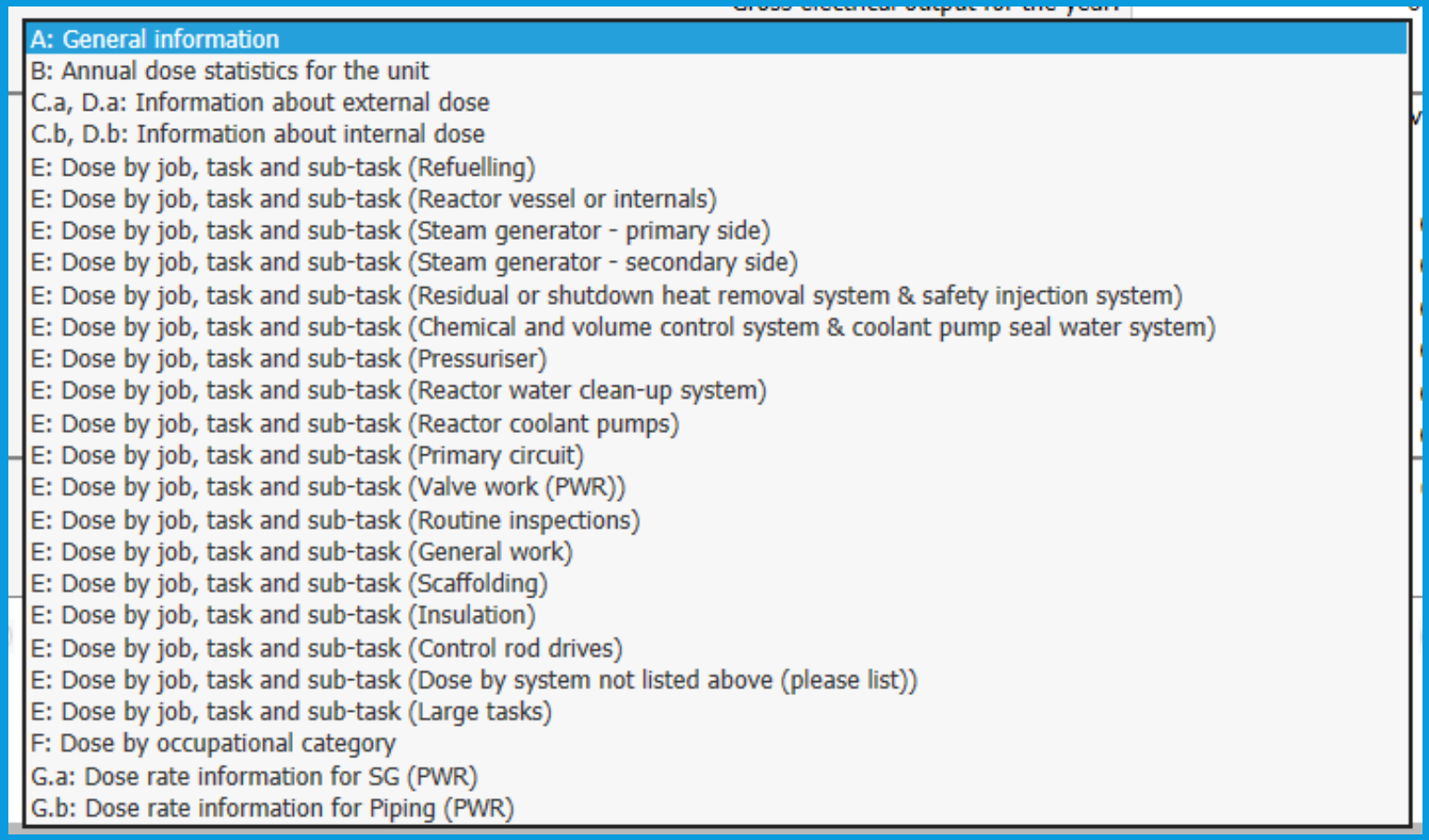
- Finding from pre-analysis;

Cross comparison of outage doses with other NPPs, ex. Ohi with Tomari, cannot be done!

1. due to strong individual dependency in data input
2. due to high dispersion of data input completeness

2. ACTIONS & PROPOSAL FROM ATC SECRETARIAT (4-2)

ISOE Input data Tables, Table E for dose by jobs



3. SOME DOSE ANALYSIS BASED ON ISOE DATABASE (1)

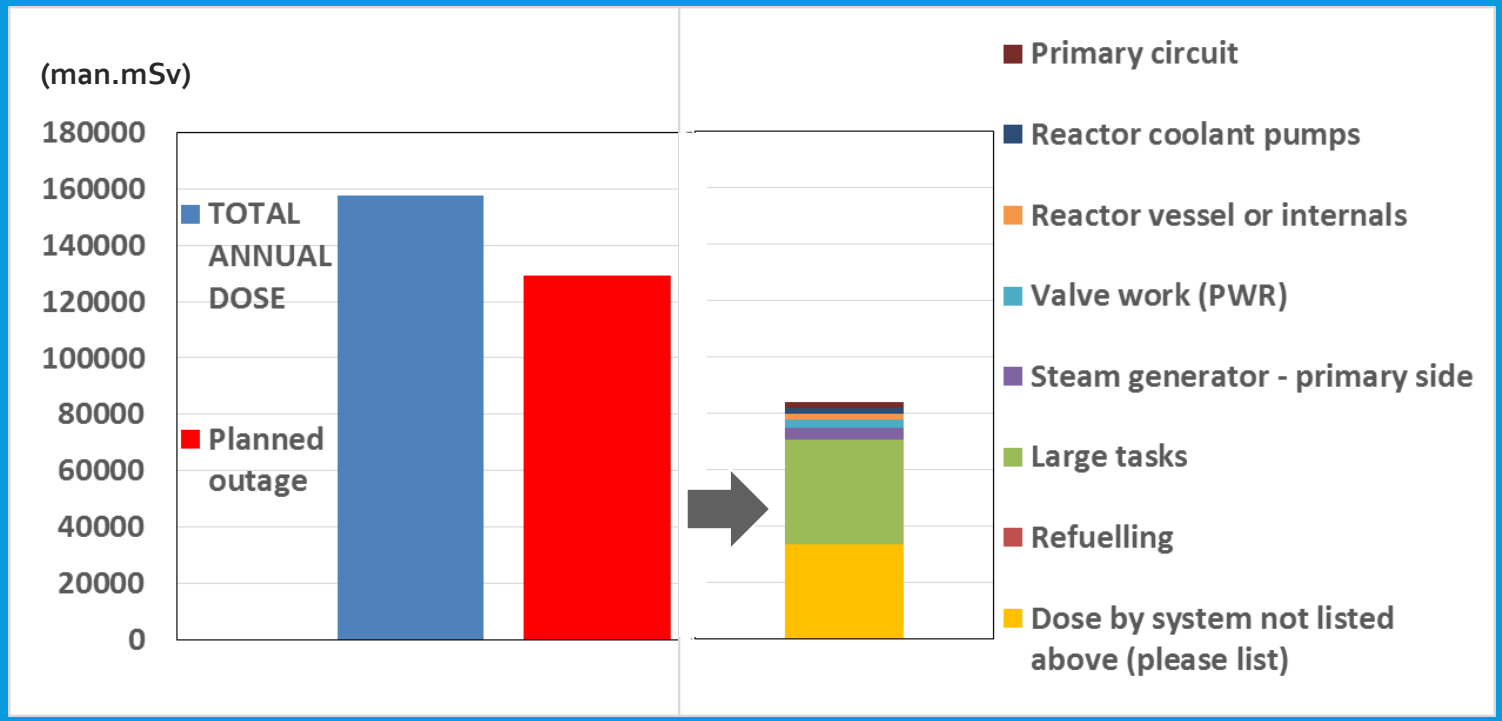
- Select high dose job during outage for comparison, e.g. fuel exchange
- Influence factors:
  - Plant type
  - Unit generation
  - Unit size
- Selected Plants:
  - PWR: Ohi,Tomari
  - BWR: ……

3. SOME DOSE ANALYSIS BASED ON ISOE DATABASE (2)

- Ohi nuclear power station Unit1-4

  (Unit 1 and 2 have been already in non-operating to decommissioning since March in 2018.)

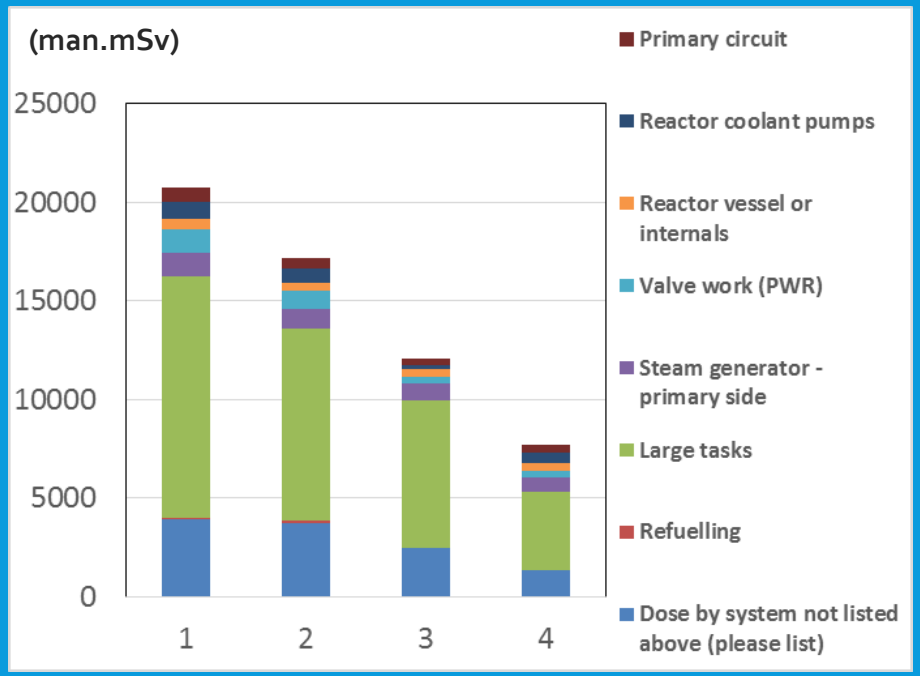
- Sum of total Annual Dose (man･mSv) (From 1992 to 2017)
- Planned outage accounts for an amount of 80% of total Annual Dose (same for Tomari,& assumed to be same for other PWRs in Japan)
-

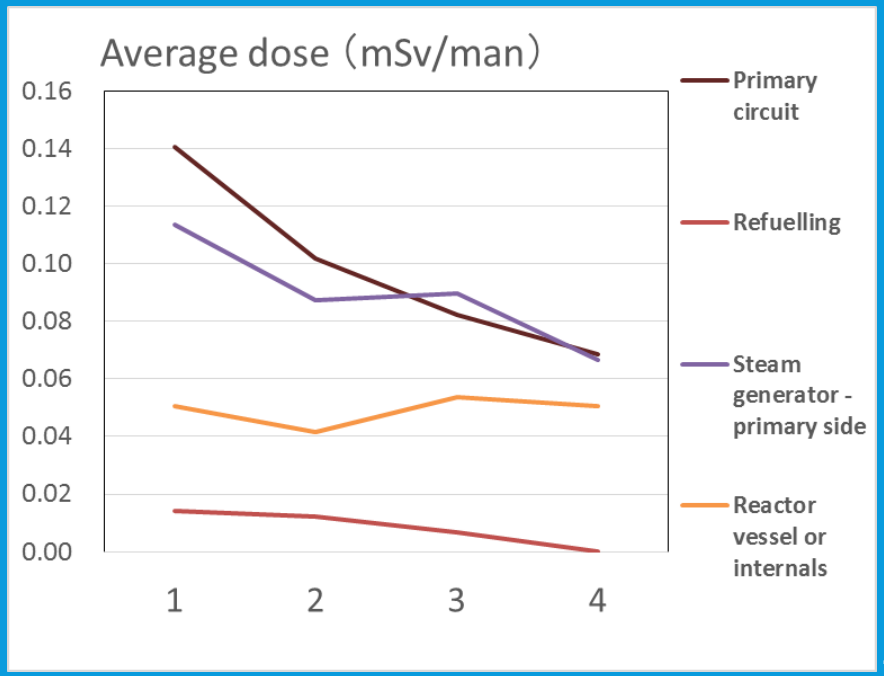


3. SOME DOSE ANALYSIS BASED ON ISOE DATABASE (3)

- Ohi nuclear power station Unit1-4
  (From 2000 to 2010)

Unit	1	2	3	4
Sister group	W41	W41	M42	M42
Since (year):	1979	1979	1991	1993



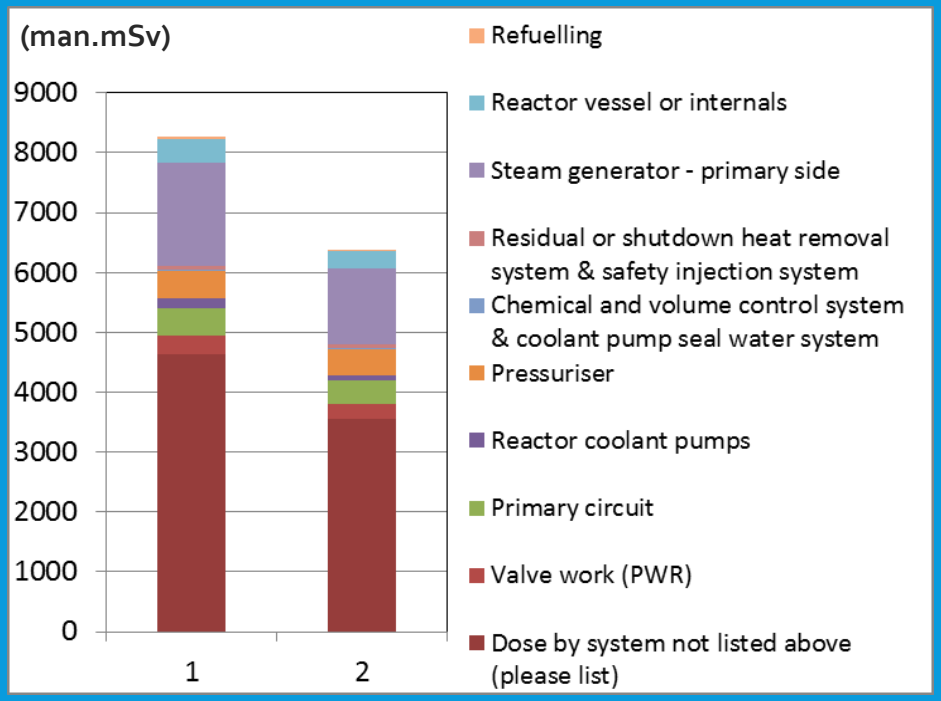


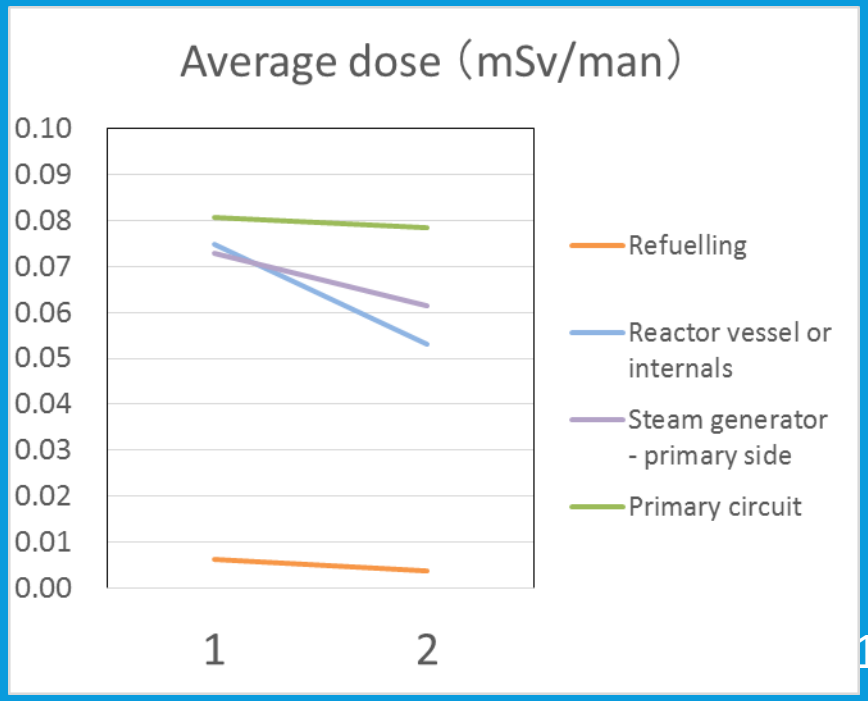
3. SOME DOSE ANALYSIS BASED ON ISOE DATABASE (4)

- Tomari Nuclear Power Plant Unit1-3

  (From 2000 to 2010)

Unit	1	2	3
Sister group	M22	M22	M32
Since (year):	1989	1991	2009





4. USER FEEDBACK (1)

- Collective dose from planned outage accounts for an amount of 80% of total annual dose, so analysis of dose by jobs is effective for ALARA pint of view.
- Items of "Large tasks" and "Dose by system not listed above" account for about 70% of the outage collective dose. This makes detailed cause finding analysis difficult for specifying the high dose jobs.
- **Strong individual dependency in 'job dose' data input is observed.**
- **Huge dispersion of data completeness is observed.**

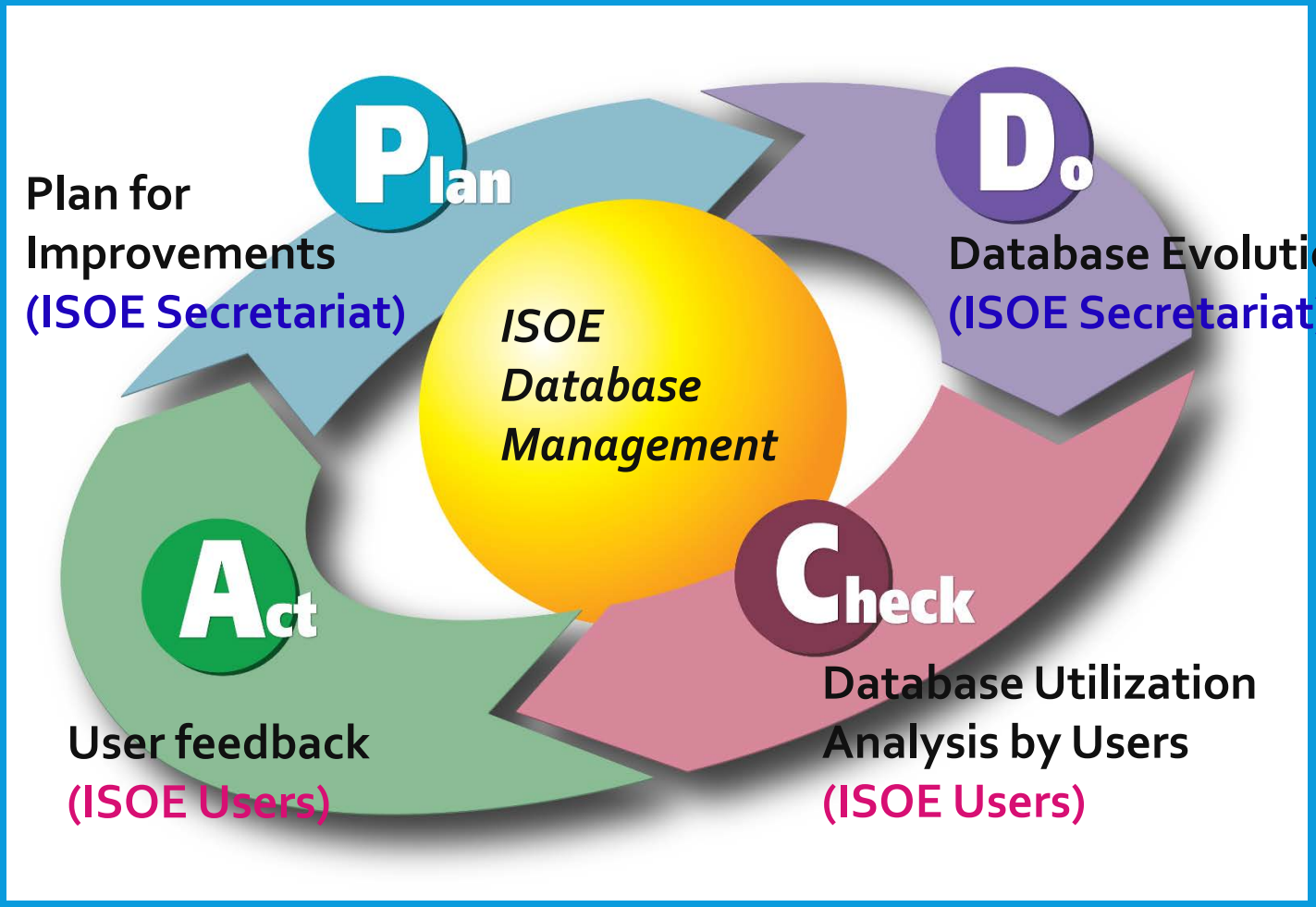
4. USER FEEDBACK (2)

Areas for database improvement

- Database input; especially for outage dose input, avoid individual dependency
- Categorization of jobs during outage could be revised; to be more simple, more clear in order to avoid individual input dependency and duplicated counting of doses

5. CONCLUSION (1)

Remind PDCA cycle for Evolution!



5. CONCLUSION (2)

For evolution of ISOE database;

1. ISOE database should be more user friendly; still, there are areas for improvement
2. Users feedback is a big contribution; encourage ISOE participants to be frequent users
3. Need closer cooperation between ISOE secretariats and participants ; Database users

These should contribute to further ALARA in RP activities and, should keep live 'ISOE' long.

This makes ATC sec. VERY HAPPY!

THANK YOU !