

# DOE Central Registry

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## Toolbox Reboot

LLNL-PRES-805484

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# Votes for New/Updated Codes

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## Participants:

- 19 Sites
- 72 Individuals

# Voting for Toolbox Codes – Raw Numbers

Read 

Tool	Votes	Tool	Votes
MCNP	38	COG	37
HotSpot*	24	ETAP	23
MACCS2*	22	CFAST*	18
EPIcode*	14	SCALE	14
RADCALC	13	SAP2000	13
ALOHA*	12	COMSOL	12
AutoPIPE	11	PipeFlo Pro	11
RISA 3D	11	ANSYS Fluent	9
GENII*	9	Hilti PROFIS Anchor	9
MELCOR*	7	ABAQUS	6
ARCON96	6	RISA 2D	6
RSAC	6	STAAD	6
ANSYS Mechanical	5	FDS	4
POSTMAX	4	HASS	3
ANSYS	2	IMBA Expert, DOE*	2
ANSYS LSDYNA	1	PAVAN	1
Radiological Toolbox	1	CONTAM	0

\* Currently on the Central Registry Toolbox

# Top Ten Tools – Raw Numbers

Tool	Votes
MCNP	38
COG	37
HotSpot*	24
ETAP	23
MACCS2*	22
CFAST*	18
EPIcode*	14
SCALE	14
RADCALC	13
SAP2000	13

\* Currently on the Central Registry Toolbox

Voting for  
Toolbox  
Codes –  
Top 10  
Leveled  
by Site

Tool	# of Sites	Sum of Rankings
MCNP	11	27
ETAP	6	19
HotSpot*	11	19
MACCS*	6	11
SCALE	8	10
RADCALC	6	11
ALOHA*	8	8
SAP2000	5	9
EPIcode*	7	12
ANSYS Fluent	5	6

\* Currently on the Central Registry Toolbox

# Leveled Voting - Math Explained

- Data was provided by 18 different DOE contractors and 1 DOE Field Office
- AU grouped a single site's input, using its highest rating for a code
- Codes were then sorted by the number of sites identifying the software by the sum of the highest ranking for that code
- For example:
  - MCNP was identified by 11 sites
  - 3 of those sites rated MCNP as a 5 (highest rating)
  - 1 site rated it as 3; 2 sites rated it as 2; and 5 sites rated it as 1 (lowest rating)
  - Therefore,  $5+5+5+3+2+2+1+1+1+1+1=27$
  - HotSpot also had 11 sites vote for it, but its total rating was lower at those sites

# Next Steps for Toolbox Candidate List

- Currently 33 potential software candidates are on this list
- AU will reach out to PSOs, User Communities (e.g., FP, Haz Analysis), and the code development organizations
- Combine and compare the recommendations from all sources
- AU-30 will prioritize the potential candidate software list to include critical updates to existing toolbox codes
- Currently working with ANL, SNL, and LLNL, to share revised Central Registry evaluation criteria

# Qualification Streamlining Recommendations

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Task Lead: Vicki Pope

Team Members: Cliff Glantz, Keith Morrell, Carol Olijar, Greg Smith, Russell Swannack, Dave Thoman, and Ashley Toth



# Qualification Process Recommendations



Qualify vendor, not specific software title or version



Use site or third-party assessments as starting point for Toolbox qualifications



Submit and review delta information for new versions of previously qualified codes



Have Central Registry qualification team run general tests of submitted codes



Require user sites to run installation tests and at least 1 site-specific test for which the acceptable answer is known by an alternate method



Use EFCOG's SQA Audit Task Force team to help conduct qualification assessments



Use EFCOG's SQA group to help vendor's get prepared for qualification assessments

# Central Registry Toolbox Qualification: RESRAD

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- Assessment team: 4-5 Feds/Consultants + 2 SQA SMEs (from LLNL and SNL )
- Code: RESRAD, Produced by Argonne National Lab
- Anticipated Time Frame:
  - Assessment Activities Over 3-4 Months
  - Originally: January through May
  - Now: July through Early October

# RADCALC

- RADCALC provides various radioactive materials and waste transportation classification determination calculations for shippers and facility operators.
- Software Sponsor – DOE EM (Environmental Management) Office
- Originally developed by commercial company but failed to maintain NQA-1 compliancy.
- PNNL took ownership of source code for version 1.0 and has worked to re-engineer where needed and upgraded code to version 2.0.
- Goal is to add RADCALC to Central Registry Toolbox

## RADCALC (cont.)

- DOE performed an on-site project audit in mid-FY19 to assess progress of redevelopment efforts
- Results:
  - All software, data & documentation work activities are being performed with a very high level of documented technical expertise
  - PNNL disagreement over validity of auditing “in progress” work products to the same standard as finalized/completed work products
  - Eight Findings, Two Observations and One Opportunity-for-Improvement
- PNNL provided evidence of corrective actions for all findings and observations
- DOE-EM QA reviewed and deemed corrective actions were acceptable