

Chemical Engineering 512

Nuclear Reactor Transient Modeling

Lecture 6

Heat Structure Input



Spiritual Thought

The Savior's Atonement made it possible for us to overcome all evil—including contention. Make no mistake about it: contention is evil! ...Contention drives away the Spirit—every time. Contention reinforces the false notion that confrontation is the way to resolve differences; but it never is.

Contention is a choice. Peacemaking is a choice. You have your agency to choose contention or reconciliation. I urge you to choose to be a peacemaker, now and always.

-President Russell M. Nelson

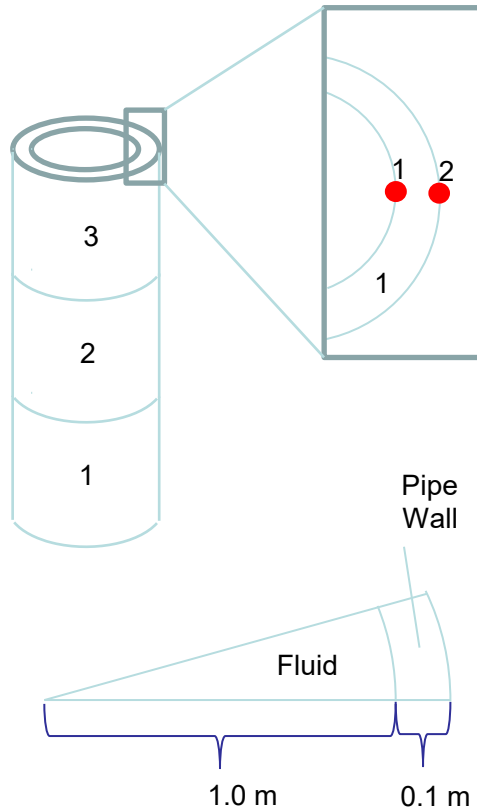


Objectives

- Go over heat structure input
- Practice heat structure input



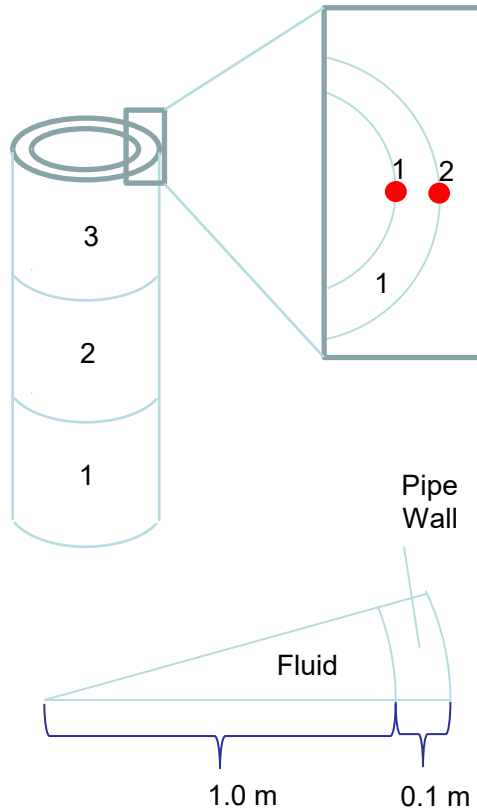
Heat Structure Example



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278 *****
279 *
280 *                               Heat Structures
281 *
282 *****
283 *
284 *   AxialHS  RadMesh  GeoType  SSFlag  LeftBound
285 11000000    3         2         2         1         1.0
286 *   MeshLocation  MeshFormat
287 11000100        0         1
288 *   NumOfIntervals  RightCoordinate
289 11000101        1         1.1
290 *   CompositionNum  IntervalNum
291 11000201       100         1
292 *   SourceValue     IntervalNum
293 11000301        0.0         1
294 *   InitialTemp     MeshPointNum
295 11000401       500.         1
296 *   BoundaryVol/Table  Incr    BCType  SACode  SA/Factor  HSNum
297 11000501    150010000    10000    1         1         1.0      3
298 *   BoundaryVol/Table  Incr    BCType  SACode  SA/Factor  HSNum
299 11000601    160010000    10000    1         1         1.0      3
300 *   SourceType  Pf    LeftBoundMult  RightBoundMult  HSNum
301 11000701        0    0.0    0.0         0.0         3
302 *   HydDiam  HLFor  HLRev  GSLFor  GSLRev  GLCFor  GLCRev  Boil  HSNum
303 11000801    0.0   10.0   3.0    0.0    0.0    0.0    0.0   1.0   3
304 *   HydDiam  HLFor  HLRev  GSLFor  GSLRev  GLCFor  GLCRev  Boil  HSNum
305 11000901    0.0   10.0   3.0    0.0    0.0    0.0    0.0   1.0   3
306 *
  
```

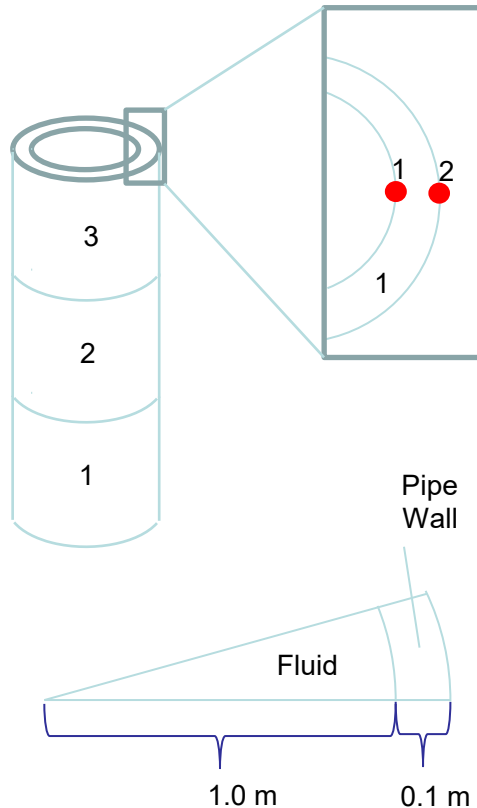
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305 11000901      0.0      10.0      3.0      0.0      0.0      0.0      0.0      1.0      3
306 *
  
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Heat Structure Example

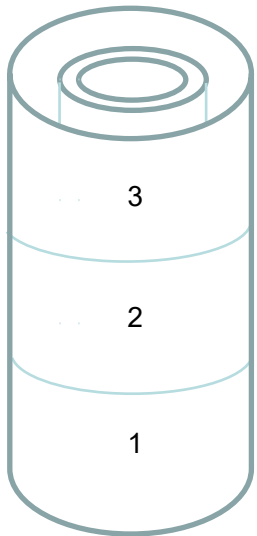


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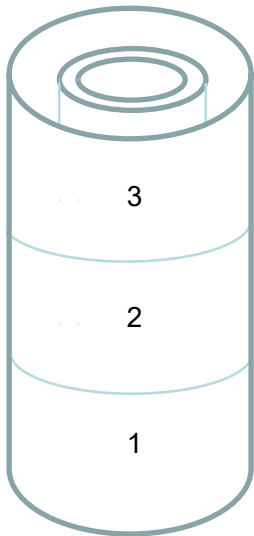


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305 11000901     0.0     10.0     3.0     0.0     0.0     0.0     0.0     1.0     3
306

```


Thermal Property Data

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325 *****
326 *
327 *
328 *
329 *****
330 *
331 *
332 20110000 MaterialType s-steel
333 *
```

