

CR for pow divide-by-zero case

WG 14 N2271

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C FP Group

CR nnn

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Reference Document: IEC 60559

Subject: pow divide-by-zero case

Summary

The C specification for the **pow** function in F.10.4.4 says

— **pow**(± 0 , $-\infty$) returns $+\infty$ and may raise the “divide-by-zero” floating-point exception.

However, IEC 60559:2011 explicitly disallows exceptions in this case:

pow(± 0 , $-\infty$) is $+\infty$ with no exception

which is consistent with that standard’s general specification for `divideByZero`:

The `divideByZero` exception shall be signaled if and only if an exact infinite result is defined for an operation on finite operands

There’s no indication that this will change in IEEE 754-201x.

The following suggested TC makes the C specification consistent with IEC 60559.

Suggested Technical Corrigendum

In F.10.4.4, change:

— **pow**(± 0 , $-\infty$) returns $+\infty$ and may raise the “divide-by-zero” floating-point exception.

to:

— **pow**(± 0 , $-\infty$) returns $+\infty$.