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`longjmp()` from signal handler.

Problem being solved:

Currently, there is no way to leave a signal handler for `*SIGFPE*` and continue execution. `*abort()*` and `*_Exit()*` are the only two functions that can be called from a signal handler; both result in program termination. Both `*return*` (for `SIGFPE`, `SIGILL`, `SIGSEGV`, or implementation-defined values) and `*longjmp()*` (for any signal) being used by a signal handler results in undefined behaviour.

Since a `*SIGFPE*` need not happen during a floating-point instruction, that is, it may happen tens or hundreds of integer instructions later, doing a return from the signal handler for `*SIGFPE*` makes no sense and remains undefined behaviour with this feature. Also, if the `*SIGFPE*` does happen with the exceptional floating-point instruction, doing a return would go back to the same bad place, so unless a portable way of altering the instruction's operands were found, the same `*SIGFPE*` would re-happen.

Issue: Should this be limited to just `SIGFPE`?

Existing practice (of `longjmp()` from signal handlers of at least `SIGFPE`): `gcc`, `MSVC`, ...

This proposal is an optional feature, and current implementation need do nothing to support it.

Alternate solution: Add `*longjmp()*` to the list of allowed functions in paragraph #5 in 7.14.1.1. This would be a new requirement on existing implementations.

Solution:

Add to 7.14 Signal handling `<signal.h>`, new paragraphs after #4.

The implementation defines
`__STDC_LONGJMP_FROM_SIGNAL_HANDLER__`
if it supports `*longjmp()*` from a signal handler for any signal.

The user defines
`__WANT_LONGJMP_FROM_SIGNAL_HANDLER__`
to tell the implementation that it will be doing `*longjmp()*` from signal handlers. All translation units shall define this symbol if any translation unit defines this symbol. Note: This is for implementations that need to do different things for signal handlers depending upon `*longjmp()*`; it need not have any effect.

Add to 7.14.1.1 The signal function, a new paragraph after #5.

If both `__STDC_LONGJMP_FROM_SIGNAL_HANDLER__` and `__WANT_LONGJMP_FROM_SIGNAL_HANDLER__` are defined, then signal handlers can then do a `*longjmp()*` for any signal handled, including `*SIGFPE*`, `*SIGILL*`, and `*SIGSEGV*`.

Words for Rationale: Are any needed?